

THE

NEW YORK

DENTAL RECORDER,

DEVOTED TO THE THEORY AND PRACTICE OF

SURGICAL, MEDICAL AND MECHANICAL DENTISTRY.

EDITED BY

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VOLUME VI.

NEW YORK:

PRINTED BY GROSSMAN & SON, 59 ANN STREET.

1852.

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Vol. VI.

OCTOBER, 1851.

No. I.

ARTISTIC DENTISTRY.

An Essay read before the American Society of Dental Surgeons, at their Twelfth Annual Meeting, held in Philadelphia, August 5, 1851.—By A. HILL, D. D. S.

GENTLEMEN OF THE AMERICAN SOCIETY :—The subject of the present paper I have entitled *Artistic Dentistry*. My object has been to draw out before the mind more distinctly certain topics not generally noticed with as much particularity as the subjects seemed to demand.

It has occurred to me, that this department of our profession has not received that attention, from those who have written upon dental subjects, to which it is entitled.

Many able pens have been employed to much advantage in setting forth, in all their minuteness of detail, the different *mechanical* contrivances and the various modes of their application, so far as they are considered essentially useful to the practitioner of Dental Surgery.

Anatomy and Physiology.—Chemistry and Materia Medica, with general Therapeutics, have each contributed with a good degree of liberality their respective quotas to ennoble and enrich this useful profession.

But I respectfully submit, that neither the skill of the accomplished surgeon, nor the ingenuity of the industrious mechanic, is adequate to the full accomplishment of that which is aimed at by the members of the dental profession, or demanded by the wants of those who require their services.

The physician may exhaust his skill in the treatment of disease ; the surgeon, as a last resort, may be required to amputate a limb, or remove a dangerous cancer, and acquit himself perfectly in the dexterous use of the *knife*, the *saw*, and the *bandage* ; and as the poor patient recovers, minus one or more of his limbs, his services are no longer requisite—his legitimate work is done.

The artistic skill of one, who has an eye to the beauty of *form* and *proportion*, may now be summoned, who shall mould a limb and form a foot with so much excellence, as to compensate to some extent for the loss, and almost rival nature herself, in its beautiful adaptations.

But not so with the dentist. It is demanded and expected of him that he fulfil the several and distinct functions of the physician and surgeon, the mechanic and artizan.

He must not merely treat diseases of the mouth and teeth, in all their various relationships and multiform sympathetic connections, but he must extract, clean, regulate and restore, file and fill, and thus necessarily invade the domain of the surgeon, mechanic, and artist.

What wonder is it, that comparatively so few are competent to meet and fulfil the public expectation in these various particulars.

And how sadly mistaken is he who supposes that a few weeks, or months at most, are sufficient to qualify himself for the duties of such a profession.

In strict language, surgery may be defined to be "the act of healing by manual operation."

Art, as applied to our profession, may be considered distinctively, as in those cases where the mind or the imagination is chiefly concerned, and may not improperly be classified with the more liberal, polite and elegant arts of *poetry*, *music* and *painting*.

Emotions, as distinct as the prismatic colors of the rainbow, are known to supply the necessary inspiration in each of these several departments; and yet they may become blended in such a delightful manner, as to leave no distinct and perceptible trace of the precise line of their union.

The difference between the mechanic and the poet, the musician and the painter, can only be properly comprehended by a careful analysis of each.

It will, however, be sufficient for our present purpose to take one or two illustrations, by which these characteristic marks of distinction may be seen, and rendered applicable to the subject we have taken in hand.

The eye of an ingenious mechanic may sweep over a beautiful landscape, embracing

"Upland grove and dell,"—or
Mountain, valley and river.

But how entirely different are his emotions from those of the genuine *poet*, *musician*, or *artist*? Observe them for a moment. You will see

"The poet's eye, with a fine phrenzy rolling."

You will see his soul displaying itself over every lineament of his face, while he drinks in the delicious inspiration of the scene. The musician hears the dim

"Music of the spheres"—

The babbling music of the brawling brooks, the choral anthems of the feathered songsters, until his wrapped soul can be silent no longer.

Meantime the artist is reveling in all the beautiful combinations of light and shade—the sunlight that mildly quivers on the mountain-top, and streams in softest beauty down into the valley below. And those elegant tints of multiform foliage display themselves before his vision, until he instinctively seizes the pencil and transfers them to his canvas.

How various—yet how distinct, these impressions!

The poet breaks out in a rhapsody—the musician sweeps his lyre—the artist is seated at his easel—while the mechanic is coolly and tamely querying within himself as to “what tree will make the best shingles,” and how the timber, which he sees before him, can be best made to subserve the purposes of his calling.

And these characteristic marks of distinction are not altogether peculiar to those individuals which we have named, but are a frequent matter of observation among all classes of men, and in every department of industry.

The peculiarity of which we speak, constitutes the difference between the coarse blunt form, rude spars and unwielding movements of an old Dutch ship, or a Chinese junk, and the elegant clipper-built vessels of the present day. The former resembling nothing but the most ungainly things, either on sea or land, and would almost puzzle a stranger to tell whether they were ever intended for nautical purposes or not. While the latter, so beautiful in their proportions, so symmetrical in their arrangements, and perfectly adapted to the purposes for which they are designed, may justly be said to “Walk the water like a thing of life.”

It is the display of artistic talent, in combination with high attainments in the mechanic arts, that constitutes this difference, not merely in the cases we have cited, but in every department of genius and industry.

Having briefly called your attention to the subject, with a few illustrations designed to show more distinctly the peculiar topic we have chosen as the subject of the present paper, we will now proceed to point out its more pertinent application to our profession.

In the manufacture, adjustment, and adaptation of artificial teeth and their appendages, this principle finds its fullest scope. No other branch of our profession offers a field so inviting and ample as this, in which to display true *artistic* skill (as distinguished from pure mechanical and scientific attainments) as this department of dental operations.

It is absolutely indispensable here from first to last. From the *moulding* and *carving* of the clay itself, to the *painting*, *glazing* and *setting*, *artistic skill* alone can ensure success.

The carving of mineral blocks is a species of sculpture where the truest and most clever artist cannot fail of distinction. Even Powers himself, were he to employ his genius upon a matter of this kind, would, I doubt not, exhibit the same masterly hand that has so exquisitely moulded the inimitable statue of the Greek Slave. And that which distinguishes one piece of this kind from another, is the same thing that distinguishes all his chaste and beautiful productions from the inferior specimens of those who would fain emulate his unrivalled excellence. And it would be almost as proper to compare some of those specimens which we sometimes see upon tomb-stones in some of our country graveyards, with these gems of art, as to institute a comparison between the productions of some who are laboring in this department of the dental profession. Great strength some of them most undoubtedly have, and so have our New England ox-carts; and they will "stand the fire," and so will the "Salamander safes." "They will do for grinding," so will mill-stones: and if these qualifications (which, by the way, are very essential) are the only ones to recommend them, the day has gone by when they will be very likely to find a market.

But it affords me great pleasure to know that there are those in our own country, who cater to the wants of the community in this regard, who have no need to be ashamed of their productions. And some of them, *especially*, seem to have left but little more to be desired, in order to render an artificial denture all that the most sanguine aspirations of the profession have ever anticipated.

No specimens which I have seen, have served more to deepen this conviction upon my own mind, than some of those beautiful specimens from the laboratory of Jones, White & Co. Here is something besides those qualifications above referred to, as being common to the *ox-cart*, the *Salamander*, and the "upper and nether mill-stones."

Observe them, and you will see the delicate touches of the artist's pencil, displaying the skill of something more than a *mere* amateur in this business. Those delicate shades around the festooned borders of those *gum-teeth* are such as, when properly mounted and adapted to the mouth, almost rival nature herself in her beautiful productions.

But I am happy to know that these gentlemen are not alone in running this race for distinction. Others are ably competing for this prize, and to whom the final award of superior excellence will be made, is certainly more than I am able to say.

Among others, whose elegant productions are worthy of being mentioned as further illustrative of the peculiar feature we are seeking to

develop, the names of such men as Stockton, Alcock, Morton, Crosby, and many more, probably, whose specimens we have never had the good fortune to see, should not be omitted.

We thus particularize, not by any means to seem invidious, but first, to illustrate this feature of our subject; and secondly, to award praise where it is unquestionably due.

The rapid strides of this rapidly advancing department of our useful profession have, for the last few years, been such as almost to pass the bounds of credibility.

This advancement, especially in *Artistic Dentistry*, may be very clearly seen by attending for a moment to the following extract from a work on Dental Science, published in 1834. The work is entitled, "A Treatise on the Anatomy and Physiology of the Teeth, &c.: their diseases and treatment, with practical observations on Artificial Teeth, and rules for their construction. By David Wemyss Johnson, M.R.C.S.E., Dentist in ordinary to his Majesty, and to his Royal Highness the Duke of Sussex," &c.

Now, with such a flourish of trumpets in 1834, what do we find upon the subject of artificial teeth? The following extracts from his pen will show. He says: "Artificial teeth have also, of late years, been made from a *porcelaneous substance*, and under the name of "mineral" and "terro metallic" teeth, have afforded an extensive range for empirical deception. The attraction held out is their alleged "incorruptibility," by which term the unwary are entrapped and led to believe that teeth of this description are much more durable than the natural ones, *i. e.* natural teeth artificially used.

"The very reverse of this is the case. For although they are not subject to change of color, yet they are in every instance so brittle, as to be easily broken off on coming in contact with those of the opposite jaw. * * * * *

"When these mineral or China teeth were first introduced into this country from France (for it is to our neighbors on the opposite side of the channel that we owe these as well as many other similar ephemeral productions) the greatest mystery was affected on the subject of their composition, although any of our potters, or porcelain makers, could easily have disclosed it. * * * * *

"The most extravagant expectations were then formed from them; although few, or rather none of the advantages which they were supposed to possess, have been realized, and they are now considered to be a complete failure. They have never been much used by the lead-

ing dentists of the day, and I believe are now wholly discountenanced by the respectable part of the profession, although they still reign paramount with the disreputable."

This extract, although somewhat lengthy, serves to show in a very clear light the progress of *artistic* dentistry (at least in this country) within the last ten or fifteen years. And I am thinking that if "Johnny Bull" has not pretty essentially waked up to this matter within this period, that some of those Yankee specimens, now to be seen in the great World's Fair, will very much surprise him. But how oddly these remarks sound to us, who are now so familiar with these really beautiful gems of the dental art.

In another part of this work, this same writer goes on to describe the process of staining artificial gums made of bone, ivory, and the teeth of the Hippopotamus by immersing them into a boiling solution of cochineal, red saunders wood and vinegar.

These rude attempts at imitating nature's exquisite pencilings, although but the feeble beginnings of what we now see, yet, nevertheless, contain in them the hopeful prophecy of the glorious future, with respect to art, as applied to our profession.

While we take great pleasure in awarding high praise to those who, in our own day, have achieved so much, candor and truth compel us to say, that with respect to the formation and coloring of artificial gums, the goal is not yet reached. To a certain extent, one artist has copied another, when they should have been copying *nature most critically*. This we think must be obvious, where even the *best* specimens are placed in juxtaposition with the natural gums of a healthy mouth.

In calling attention to this subject in this particular manner, we trust we shall not be accused of the faintest desire to understate in the least what has already been accomplished.

But if the moulding, or sculpture and painting of mineral teeth and gums require the exercise of *so much* artistic skill, in order fitly and justly to represent the handiwork of nature, it is only a small part of what we deem essential to their successful use and application.

It is in their adjustment and adaptation to the mouth and face, that real artistic skill, and scientific attainments combined, are more essentially necessary.

The error is quite common not only among Dentists, but throughout the community generally, that *any individual* possessing a tolerable share of mechanical ingenuity, is competent to do this business. But we think the absurdity and presumption of this thing will appear evident

to every one who will attentively consider the following hints in their bearing upon this subject.

Every man has a *peculiar*, and in some respects, *distinctive* physiognomy. And these peculiarities constitute the unerring marks of personal identity. That which makes the individual look like himself and no one else. Now, no feature of the face can be changed or marred, either by accident or design, without imparting a different character to the physiognomy, and thus changing to a certain extent the relations of the individual. And hence the loss of an eye, or the involuntary contraction of a muscle, or the paralysis of the nerve of any muscle of the face, so that its natural play is impeded, may be and always are considered most unfortunate in their effects upon the physiognomy. But my no means more so than the loss or displacement of the dental organs. For here, the controlling influence of these organs are distinctly seen in all the physiognomical relations. The muscles of the cheeks, the moulding of the lips, the relation of the nose and chin, and that delightful play of the features that indicates happiness and pleasure.

In every age of the world, the "human face divine" has been a subject of interesting study and observation; and, to some extent, all men are physiognomists. Not that all men, like Lavater, or the phrenophysiognomists of the present day, are scientifically learned upon the subject; but *instinctively* and *practically*, they are and ever will be so. From the little child that intently gazes upon your countenance, either to be won by its welcoming smiles, or repulsed by its forbidding frown, to the man or woman of hoary hairs, all are practical physiognomists. And it must, we think, be acknowledged that any circumstance or combination of circumstances that are capable of changing the whole expression of the face, and of leaving upon the minds of our children and friends an impression so important and enduring, is not to be disregarded or overlooked. It is of the teeth and the features of the mouth, as related to physiognomy, that these remarks are to be applied.

It has not escaped the attention of close observers upon this subject, that every class of inferior animals, as well as distinct species of the human family, are characterized by the circumstances to which I have referred.

The researches of that great naturalist, Cuvier, has shown that the teeth alone are sufficient to determine the class of animals to which they belong, although the fossil remains accompanying them, may be otherwise deficient. But why is this, if the teeth are not strikingly characteristic?

The teeth of the Carnivora are at once striking and peculiar. The Graminivorous and Herbivorous are also distinctly marked. Man, who, strictly speaking, belongs to neither class exclusively, yet partakes, to some extent, of the peculiarities of each, and may, therefore, be said to be Omnivorous; is, nevertheless, sometimes characterized by a striking resemblance to some one of these distinct classes. Indeed, this is so manifest in some instances, that these very circumstances will enable us to read the character of the individual possessing them with as much certainty and almost equal facility, that the Messrs. Fowlers can do it by the superficies of the cranium.

Who has not seen the distinctive marks of the lion, the mastiff, and the bull-dog, in the mouth, teeth and lips of some men? And the cow, the monkey, or the rat, as distinctly in others? And what difficulty have we in predicating certain traits of character, peculiar to that class of animals, of these distinctive signs?

For illustration, suppose we find in the mouth of any patient those sharp pointed teeth, peculiar to the carnivora, so strongly marked as to excite our special attention. I ask is there any risk in affirming of that individual certain traits of character which are known to distinguish that class of animals? Of course, these peculiarities are variously modified according to circumstances, but yet sufficiently marked for the purposes to which we refer. But if you will pardon this seeming digression, I would observe further, that those long, smooth square-edged teeth, peculiar to the *kine* or *herbivorous* class of animals, not only indicate a constitutional preference for a vegetable diet or regimen, but a docile temper and tractable disposition.

These facts (if such they are) are certainly not without their value, not merely in a speculative, but in a physiological point of view. They certainly ought to be considered by the physician whenever required to prescribe a rule of diet for any individual. And they seem to me to militate with no inconsiderable force against the exclusive notions of the so-called "vegetarians."

However interesting it might be to pursue this train of thought, it would make this paper far exceed its intended limits, if we should attempt its complete development. But we have called your attention to it mainly to show its important relation to the subject we have taken in hand.

We shall generally find that these peculiarities, where strongly marked, influence in a remarkable manner the whole physiognomy. The nose and lips, as well as maxillary bones, receive a peculiar conforma-

tion, adapted to the denture as it exists or as it once existed. And where the law of sympathy is supposed to act, the relations between the several parts must be established accordingly. Hence we find short, square, and generally strong and regular teeth in short, chubby, round-faced individuals. And so uniformly is this the case, that it ought never to be overlooked or disregarded by the dentist, whose duty it may be to supply an artificial denture. We should not be willing to assert that the tallest persons in the community *invariably* have the longest teeth. But we do say that, *veterus parabus*, this is generally the case.

It is sometimes true that very tall persons have very short faces and small heads. They may be in some instances, it is true, like certain tenements which you have seen in this particular—"Long between joints and low in the garret." In a case like this, you will doubtless find a great disproportion in the length of the teeth, as compared to the body and limbs. But these may be considered rather as exceptions to the rule, than as constituting the rule itself.

Nature is generally harmonious in matters of this kind; and seldom places a short trunk and diminutive head upon long, slim pedestals. And the relative size of the body: its peculiar conformation, and other circumstances, may be told with as much precision and exactness from seeing the teeth alone, as it is possible to infer the same from any other detached portion. The law of relative proportion is such, that these circumstances seem to us indubitable.

The following extract, from a recent scientific work, is so full of interest, and so much to the point under consideration, that I trust I shall be justified in quoting it here. It is as follows:

"In the extensive quarries of gypsum, near Paris, the workmen frequently dug out the bones of unknown animals. In the mind of the uneducated laborer, they excited little attention, and were thrown away.

"The fact, however, coming to the knowledge of Cuvier, he undertook to examine the matter. The result of the examination astonished himself and the world. He discovered upwards of fifty species of animals not now known on earth. They all belonged to the order which naturalists call the *pachydermata*, or thick skinned, of which the horse the hog, and the rhinoceros are examples. They were not, however the horses, hogs, or any thing else now living on the globe.

"Cuvier's own account of the manner in which he succeeded in reconstructing these strange skeletons, is peculiarly interesting. I found myself (says he) as if placed in an immense charnal-house, surrounded by mutilated fragments of many hundred skeletons, of more than fifty

kinds of animals, piled confusedly around me. The task assigned me, was to restore them all to their original position. At the voice of comparative anatomy, every bone and fragment of bone resumed its place. I cannot find words to express the pleasure I experienced in seeing, as I discovered one character, how all the consequences which I had predicted from it, were confirmed. *The feet were found in accordance with the character announced by the teeth; the teeth in harmony with those indicated beforehand by the feet; the bones of the legs and thighs, and every portion of the extremities, were found set together precisely as I had arranged them before my conjectures were verified by the discovery of the parts entire. In short, each species was, as it were, reconstructed from a single one of its component elements."*

Now, if these considerations are entitled to any weight, as tending to throw light upon the uniformity, consistency and harmony of nature's own works, their pertinency to the subject before us must be seen at once. And something more than mere mechanical skill is required in preparing and adjusting artificial teeth.

If it be true that the size, shape, color and position of the teeth in man, conveys to the mind of the beholder certain distinct impressions as to *character* and *temperament*, then it is easy to be understood how the dentist may *libel a man, and destroy his character completely*.

If he puts in the mouth of a broad-shouldered, thick-necked, chubby, laughing-faced, individual, an entire set of long, slender, and delicately transparent, or pearly teeth, he has outraged nature in her own temple, and caricatured his confiding victim. Such teeth as these do not belong to this variety of the species, any more than the teeth of an insignificant poodle belongs to a mastiff or a brave Newfoundland dog. And the varieties in the former are as remarkable as in the latter case.

Equally unbecoming and improper would it be to substitute large, short yellow teeth in the mouth of a delicate young lady of a nervous-sanguine temperament, blue eyes, clear complexion, and a pulmonary diathesis.

Age, too, has its distinctive marks. Not that we are to examine the mouth of men and women, as they do horses, to learn how old they are; not so. But I contend that the operator should be able to tell, from the numerous physical signs connected with this subject, the relative size, color and form of the teeth associated with the several varieties of temperament, form, figure and age of each individual.

In old age, the complexion changes—becoming more sallow and less

transparent. And the same change as to color takes place in the teeth of aged persons.

The diminished force of the heart and arteries ; the consequent moderation in the action of the capillary vessels, together with the corrugated or wrinkled condition of the skin in the case of aged persons, all tend to corroborate this statement, and may be regarded as so many signs hung out for our guidance in the pursuit of scientific knowledge.

The antagonism of the teeth is another point demanding our attention. Every one knows the effect upon the physiognomy which that peculiar protrusion of the under-jaw, known as "*jimber jaw*," produces.

The style of the countenance, and the "*tout ensemble*" of the face becomes identified with this malformation, and receives its peculiar physiognomical character from it. And every similar departure from a legitimate and regular arrangement of the features is, in so far, a departure from the true standard of personal beauty.

In the arrangement of an artificial denture, as to the matter of antagonism, much of personal beauty and individual character depend. And I might also add, much of the comfort and real utility of the teeth themselves.

How much annoyance, vexation and weariness people are sometimes compelled to endure in consequence of a false antagonism of the teeth, may be known by attending to the following circumstances.

In the first place, nature has fixed the precise point of contact between these organs, and has adjusted the muscular movements of the parts accordingly. And it must be obvious that any alteration, involving the change of the leverage of the parts, must subject the muscles to a strain involving weariness and pain. And not only so, but every motion of the parts, either in eating or speaking, must be accommodated to the change.

This necessarily involves a comparative change in the arrangement of the features, and an expression of the countenance, at once unfortunate and unnatural. To adjust these parts in harmony with nature's own plan, so as to preserve the just balance of power, the easy and natural motion of the parts, and the regular and uniform play of the features, is absolutely indispensable to success, and is therefore most desirable.

Moreover, any variation from this point, even though it be but the twelfth or sixteenth part of an inch, necessarily changes the fulcrum, and diminishes the power and ease with which mastication is performed.

I have become satisfied, from observations upon this point, that too

little attention has been given to these considerations by the members of our profession. And it has doubtless been observed by you all, in the course of your experience, that the teeth artificially supplied, are sometimes too short and sometimes too long, and thus, in both instances, imparting a false character to the person who wears them. And it is only by attending to some of the suggestions herein made, that a remedy can be supplied. A perfect imitation of nature is the perfection of art.

The very best productions of the greatest masters, in painting and statuary, always have and ever must derive their greatest excellence from the fidelity and skill with which they copy nature. Aside from this, neither painting nor sculpture possess any excellence or are of any value.

And this resemblance, which is so essential in works of this kind, necessarily involve the strictest attention and deepest thought. Circumstances are of consequence to them, which, to men in other professions, are of little account. And the same thing is true of him who would distinguish himself in the department of dental surgery to which we refer. The form, figure, size, temperament, and complexion, are all to be consulted, and order and harmony restored.

Where malformations and actual deformity exist, real artistic dentistry may do much in changing and bringing back the legitimate form and expression of the face. Indeed, it must be in circumstances like these, that the most noble and splendid achievements are to be sought. And the restive spirit of professional ambition can never be satisfied until the results, so briefly alluded to, and so imperfectly foreshadowed, are fully realized.

RIMMING SETS OF TEETH.

Ogdensburg, Sept. 1, 1851.

DR. C. C. ALLEN.

My Dear Sir:—In the August number of the Recorder I noticed an article on “Rimming Sets of Teeth,” and wish to make a suggestion in reference to the matter, of a plan that appears to me much more simple than any other. I get up my casts in the usual manner, and in cutting out my plates cut enough larger than common for the proposed “Rims.” In swedging this, it goes so far upon the outside of the alveolar ridge that it is apt to lap in folds and look bad; to obviate this, make three V shaped incisions in the plate, or take out a piece of that shape, one at or near the median line, and the others about opposite the first bicus-

pids on each side. Then swedge in the usual manner, and after trimming the edges so as to bring them about equidistant from the centre of the alveolar ridge, I take a small pair of pliers, and having ground the sides perfectly smooth, and the edges a little rounding, so as not to indent or scratch the plate, I bend the edge and make the rims. In doing this the plate will frequently become warped, so as not to fit the cast, to obviate that, I take the male cast, and imbed it in sand, nearly to the top of the alveolar ridge, and then pour on metal for the female. In doing this, if the male cast is of zinc, or tin and lead, you may get up entire new casts from the plaster models, for where the plate is thick, the swedging of it will sometimes spring the first metal model so as to require a new one.

In swedging the second time you have a perfect fit of the roof of the mouth and alveolar ridge, and at the same time the metal does not come quite in contact with the rim.

With this method I have succeeded better than with any other, and make my plates full as strong as by the method you described.

If in this there is any thing new, or good for any thing, it is at your service.

Yours, most truly,

S. S. BLODGETT.

Remarks upon the Above.

We have seen several plates rimmed in the manner described by our correspondent, and have constructed them in this way; but it strikes us that there are advantages in either of the methods which we have before described, over the one now explained by our correspondent. For instance,—It is always desirable to have the plates, both above and below, go over the outside of the alveolar border and gums as far as possible, as this increases the suction by excluding the air. In our anxiety to make them as broad as possible we sometimes get them too large, and are compelled to cut the edge away. Now, if we adopt the plan described in a former number of the Recorder, the edge may be cut away, in most cases without interfering with the rim, but in the manner which our correspondent adopts, the rim forms a part of the edge, and it cannot be cut away without destroying the rim.

It will be difficult too, in many cases, to fit the gum part of the tooth down to the rim and have the crown portion antagonize rightly with the opposite teeth, while by either of the other plans the rim is readily fitted to the gum wherever it may be upon the plate.

The labor too will be, we think, quite as great by the present plan

as by those formerly described; in our hands it is greater; but in all these different methods of accomplishing the same purpose much depends upon practice.

The rimming of gum teeth are considered indispensable. No piece of work is properly finished without it. It adds much to the strength of the work, and gives a beautiful finish to the ends of the gum in contact with the plate, which can be secured in no other way that we have ever seen.



PREPARATION OF CORRUNDUM OR EMERY FILES.

Bytown, Canada, September, 29, 1851.

DR. ALLEN.

Dear Sir :—Should you deem the subjoined method of preparing slabs or files for cutting mineral teeth, of any benefit to the readers of the Recorder, please insert the following. I have been led to write this from the notice you have taken of the subject in the August number.

Yours, most truly. W. T.

Having formed a piece of iron near the shape required, or what will answer equally as well, a worn out rat-tail or flat file, (I have several shapes in use), I select from some very coarse emery, those pieces which most resemble quartz, and having pulverized it in an iron mortar, (not too fine) lay it on a marble slab, I next take some gum-shellac, powdered or flake, and having heated the iron over a spirit lamp sufficiently to make it adhere, (taking care not to let it burn) I coat the iron all over, while the shellac remains soft, roll it on the slab containing the emery, repeating the operation several times, or until the gum has taken up as much as will allow it to remain in a firm position on the iron, at the same time keeping it in shape by means of the slab. A file of this description will, if kept wet, cut as fast as a grind-stone, and can be used in many cases more conveniently.

W. T.



A NEW MODE OF SETTING ARTIFICIAL TEETH.

The undersigned has invented and put in operation a plan by which artificial teeth may be mounted, and secured in the mouth without the aid of metallic plates or springs of any kind. This devise consists of an artificial compound substance, (similar in its composition to "*Hill's*

Stopping,") that can easily be moulded while in a plastic state, over a plaster model of the mouth, and of a color resembling the natural gums. This substance can be moulded with perfect facility to any desired form, and soon becomes sufficiently firm and solid to hold the teeth in their places and sustain them in the mouth. Being formed in its plastic state, it can be made to fit any model in the most perfect manner, so that *even single* teeth, or *partial* sets, are easily retained in the mouth without the aid of ordinary springs or clasps, by means of atmospheric pressure alone.

The great ease and facility of working this substance, enables the operator to extend it in any direction, and to mould it over the alveolar ridge in such a manner as to restore the contour of the face, no matter to how great an extent absorption of the ridge may have taken place. It likewise obviates the necessity of gum-teeth altogether, as a beautiful artificial gum may be easily formed of the substance itself.

The teeth are secured by moulding the compound around their base, without the necessity of backing or soldering in the ordinary way, and are easily restored in case of accident, without interfering with the rest.

Entire or partial sets can be made with equal facility, and worn with great ease and comfort, as a *perfect* fit is readily obtained, and no sharp cutting edges are felt to irritate and fret the parts.

For *under* sets, it cannot fail to commend itself, where firmness and solidity are so desirable, because of its extreme simplicity, and convenience. For here the edges of the piece that rest upon the muscles, can be made just as obtuse or round as the operator may desire, and the circumstances of the case admit, and the alveolar ridge built up to any desirable form.

In short, this arrangement seems to us, to reduce the difficult process of mounting artificial teeth, to the greatest possible degree of simplicity, and we are at a loss to conceive how any mode, *more simple or economical* can possibly be devised.

We are now ready to anticipate some of the questions and objections that will doubtless be started in the minds of our readers.

1st. Is the compound firm enough to sustain the teeth in mastication ?

We answer yes, abundantly so in most cases, and *especially* so where circumstances will allow a considerable degree of thickness over the alveolar border, and *almost every* case will allow this.

2nd. Will it withstand the fluids of the mouth ?

We answer—It will stand as well as "Hill's Stopping," and *that* will stand where there is no friction from mastication. But, "the

proof of the pudding, (as the old adage says,) is in eating it," and *time alone* can test the durability of this arrangement. We have several pieces that are now being worn by our patients very successfully. One piece has been worn, without the *least alteration*, for more than six months, and that too, under circumstances calculated to test it *severely*, and is likely to last an indefinite length of time to come.

For *temporary* sets, we are *certain* they must succeed, and we have high hopes of something more, but time alone must settle this question.

For several months past, we have been experimenting with respect to a *gum color*, and have succeeded so well, that we expect soon to offer it to the profession, on such terms as may seem to us *just* and proper.

Oct. 22d, 1851.

A. HILL.

EXTRACT FROM A SUBSCRIBER'S LETTER.

DR. C. C. ALLEN.—Dear Sir :

" I have been on the eve, *for the last year*, of asking you some *hard questions* about the use of the *Key* ; you doubtless recollect that some-time last year, you (as you supposed,) demolished me, in company with *some other poor devil*, whose name (I think) is *Hobbs*, about the use of the key. Now I wish to put one case to you, which occurs pretty often with me, and, I suppose, with most other interior practitioners. Suppose a lower molar or bicuspid has passed through the hands of a *physician*, and in passing has had the crown snapped off. On one side, say the inside, (which is not unusual) the fracture extends below the edge of the alveolar process, but on the outside, the root is a line or two above the edge of the process, and say farther, that the root is firm in the jaw, without any inflammation in the external periostume. In a case of this kind you cannot apply the forceps without cutting away a portion of the alveolar process before extracting the root, which will inflict *five times as much pain as the direct application of a well formed key*. But you may say that you will not use forceps, for the *elevator* is indicated. Now, my dear sir, never having had the pleasure of seeing you, I cannot judge of your physical powers, but, without they are great, I fear you would not succeed, if you had teeth to extract for our mountain men, *whose fangs are as wrought iron, and whose teeth are as tempered steel, and very highly tempered at that*. What I would say is, *that I can use the key, in such a case as the above, with much less pain to the patient, than the forceps or elevator can be used*

with, and I should think that, that is Q. S. of reasons, why I prefer the key in such cases. J. F.

Remarks upon the above.

If our friend will refer to the remarks upon the "Postscript from a subscriber's letter," in No. 7, Vol. 4, he will see that, so far from demolishing him, we stated that we were pleased to see that others could use the turnkey successfully if we could not. We simply gave our experience with the forceps, and showed how they had completely supplanted the key in our practice.

In such cases as our subscriber describes above, we have been far more successful with the forceps than with the key. Formerly we used to try the key, but found that in almost every case the remaining portion of the tooth was broken away in attempting to extract it. Now, unless such fangs have caused inflammation in the capsular-periosteal membrane, we generally allow it to remain, but if from this or any other cause it is desirable to remove it, by thoroughly lancing between the gum it and the alveolar border, a pair of forceps with narrow beaks may be passed down so as to firmly embrace the solid fang, and when once firmly laid hold of it can be wrenched in either or all directions, until the connection between it and the alveolus is completely severed. In this way we have without any difficulty succeeded with many teeth that have been fractured at the neck both with the key and forceps.

We are aware that many operators use the key with great success, and in the hands of such it is perhaps superior to the forceps in many cases; but in our practice it has been entirely superceded by the forceps. Where the operation of extraction has been attempted on account of inflammation and pain in the pulp, and the tooth fractured as low as described, the pulp is generally torn away with the fractured portion, and the pain removed. In many such cases the fang will give no farther trouble for a long time, and it will be advisable to allow it to remain until the gum and bone are absorbed so as to loosen the fang, when it may be removed without difficulty.—*Ed. Recorder.*

THE DENTAL RECORDER AND DR. E. PARMLY.

Dr. E. Parmly has addressed another communication to the Editor of the Recorder, in which he thus harps upon the old charges.—

"You have at various times published personal 'remarks' in the Recorder, which are not true, and you have refused to publish my refutation of them.

"In the August (1850) number of the Recorder, you made, without cause, a most

truthless and wanton assertion, by charging 'Dr. E. Parmly and his clique with publishing an insulting and libellous circular,' &c., &c., which is wholly unfounded in truth, there being no such circular in existence. In June, 1851, you say, 'up to the time that Dr. E. Parmly came out in the newspapers, and most impudently pronounced all dentists dishonest who use amalgam, I entertained for him, in common with the whole dental profession, the highest respect and esteem, both personally and professionally.' Now I call upon you to produce, 'published by Dr. E. Parmly and his clique,' a 'newspaper' or 'circular' containing such language."

Although this subject has occupied more space in the Recorder than it is worthy of, I am induced to publish once more the charge of dishonesty, and to publish the circular which I have pronounced insulting and libellous, and without a word of comment, except to repeat my offer, made in No. 8, Vol. 5th,—that if Dr. Parmly is willing to state in the columns of the same paper where the insulting and libellous circular was first published, that he did not mean to censure all who use amalgam in their practice when he published it, but that "*there are those who occasionally use amalgam as they affirm, where nothing else can be used*" successfully, "*that I have now, and have for years, had a respectful and friendly intercourse with,*" (his own language in the Recorder), I will, although the mischief has been done, cheerfully retract all offensive language which I ever wrote about the circular. Until he does this, (from the fact that he has repeatedly condemned it in every case*,) I am bound to believe that he meant to apply it to all who ever used it *in any case*, saying that it was better than gold in that particular case, and if so, that it is insulting and libellous. The whole merits of the controversy are here brought into a "nut shell." The following are the objectionable paragraphs and circular:

"I have no confidence in the professional honesty of any man who will use it, saying as many do, that it is better than gold."

And again—

"I have no longer confidence in him, nor in the professional integrity of others who *use it*. I cannot, therefore, recommend him, or them, as safe persons to apply to as dentists."

The following circular was also published by what I have denominated Dr. Parmly's clique, because they have acted with him in his high proscriptive course.

Amalgam Dentistry.

"I shall satisfy, I trust, every unprejudiced mind, that amalgam, from its baneful effects upon the teeth, the health, and the entire constitution, is *totally unfit* as a stopping for decayed teeth."

Letters.

Boston, June 11, 1847.

All amalgams, under whatever name that I have known to be employed for filling teeth, I hold to be injurious in their effects; and though in some instances they remain for a long time, and appear to be harmless, they do, *in all such*, fall far short of gold in effecting the preservation of the teeth.

* See No. 5, Vol. 5, Dental Recorder.

The operator who is ignorant, at this day, of the mischief he may do by using amalgams, is not worthy of being trusted; and the accomplished dentist, who has it in his power to do well, and who must and does know, as well as you or I do, that gold is, in every respect, the superior article, and will still use mercurial compounds instead of it, does but barter his conscience to cheat his fellow beings out of their teeth, perhaps of their health, possibly of their life.

Dr. E. PARMLY.

Yours very truly,
J. F. FLAGG.

Boston, June 10, 1847.

DEAR SIR—We answer with pleasure the questions contained in your note of the 7th. First, we have never used amalgams in any form, knowing them to be injurious to teeth under any circumstances. Secondly, we consider it decidedly dishonest for any dentist to use a mercurial composition, saying that it is equal to gold for filling teeth, or that it will preserve them for any great length of time.

Yours with much respect,
J. & E. G. TUCKER.

PHILADELPHIA, June 11, 1847.

MY DEAR SIR—Yours of the 7th inst. is before me. As to your first query, I would say, that I have not considered amalgam fit nor safe for stopping teeth, and have never used it.

I cannot consider any one honest who would use it and say it was better than gold; if they be honest, and use it, they must be grossly ignorant, and consider the community to be so also.

Dr. E. PARMLY.

Very respectfully yours,
LEWIS ROPER.

CAZENOVIA, June 15, 1847.

DEAR SIR—In reply to yours, I have to say that I consider amalgams not only *unfit*, but *dangerous* for plugging teeth. Unfit—because they do not answer the purpose of a proper stopping, inasmuch as like all other metallic compounds and cements, in passing from a soft to a hard consistence, they necessarily *contract*, leaving a space between the amalgam and the walls of the tooth, thereby defeating the prime object of a good stopping—to wit, impermeability to fluids and other modifying influences from without.

It is unfit, as it easily oxidises and discolours the teeth; and farther, because in skillful hands it is never necessary, gold and tin being infinitely superior.

It is dangerous, because it readily unites with acids with which it may come in contact in the mouth; and may thus generate a poisonous compound nearly akin to corrosive sublimate, which is constantly being received into the system.

It is dangerous, as corrupting the secretions of the mouth, and inducing inflammation of the gums and alveoli; and because its effects can never be fully anticipated, every gradation of effect having been produced, from the most imperceptible even to *death*.

In view of these facts, and from my own observation and experience, I cannot but consider those of *doubtful morality*, who declare that an amalgam of mercury and silver is better than gold for the purpose of plugging teeth.

Very respectfully yours, &c. &c.

WILLIAM H. DWINELLE.

BALTIMORE, June 19, 1847.

DR. E. PARMLY—*Dear Sir*: I have just received your note of the 17th, and in reply can only say, that I have seen many teeth which had been filled with amalgam, and from my observations as to its effect upon the teeth and other parts of the mouth, I do not hesitate to state that they have been *decidedly pernicious*. Viewing the matter in this light, I cannot regard those who use it, asserting that it is better than gold, as honest and sincere in the declaration which they thus make.

I am, very respectfully and truly, yours,
E. NOYES.

“Having as far as I have been able, fulfilled my duty to a generous public, I would say in conclusion, that I ask no richer reward than the high commendations I have already received from the lovers of truth, justice and humanity. And I can feel no higher professional pride, than to have my cause sustained and approved by such distinguished men as

those who have favored me with their calm and deliberate professional judgment and testimony.

E. PARMLY.*

New-York, June 22, 1847.

Dr. Parmly farther says in the letter before me—

"You well know that long after that period you gave me your hearty approval of what I had done to put a stop to the swarms of advertising amalgam impostors. You certainly did not then consider any thing I had written as being exceptionable, as your own words will prove, for even after that time I received from you a most cordial and friendly letter, giving me the free use of the pages of the Recorder, and the reason you gave for doing so was, '*for I know you are always governed by the rules of courtesy.*' How does that agree with what you have lately published to the world, namely—that long before this complimentary letter was written, by your own hand, I was 'impudent' 'insulting' and 'libellous' to you and to the profession?"

Dr. Parmly is mistaken (and for the truth of what I say I appeal to every dentist who knows me,) in saying that I ever gave my "heartly approval" of his course, for I always condemned it, and wrote against it, and opposed every step that was taken in the American Society against the use of amalgam. It is true I admitted to Dr. Parmly that good had grown out of it, that the *abuse* of amalgam had been less in consequence of it; but at the same time, and at all times, I disapproved of the course which he took, and, as he will recollect, particularly against a certain member of the profession, in condemning whom, I contended he had charged with dishonesty all who used amalgam, and produced Webster's dictionary to show him that "integrity," as he used it, and honesty were synonymous.

As to offering him the free use of the pages of the Recorder, that I have recently done, and now do, for the discussion of any subject of general interest to the profession, but not to pick a quarrel with me. No person who knows Dr. E. Parmly will deny his usual courtesy, but I have yet to learn that cool impudence or insult is any more agreeable because offered by a smooth and courteous tongue. If Bishop Hughes were to state in the newspapers, in the most courteous manner, that he had no confidence in the honesty of any person who preached protestantism, *saying that it was better than catholicism*, would the insult be any less than if offered in a pot-house, by the lowest of his followers? Dr. Parmly farther says—

"You seem to have two sets of words, one for private, the other for public use, as another example will prove. You say privately that '*amalgam is better than gold*,' and when charged with it, your reply was, 'I did say, in a private note, written hastily and to avoid all superfluous words, Dr. Allen thinks and says amalgam is better than gold.' Now this you knew to be utterly untrue when you penned it, for the *hastily written note to avoid all superfluous words*, is a long letter of nearly two pages, (letter press) closely and carefully written, and, as you afterwards said, carefully examined."

* There were three other letters, the writers of which did not see fit to brand with dishonesty those who thought amalgam better than gold, and if I am rightly informed, other members of the American Society, that were applied to at the same time, and refused to give such letters to Dr. Parmly: to their honor be it spoken.

After repeatedly stating in the Recorder what particular cases I used and recommended amalgam in, and in what I disapproved of it, I did write, in a private note to Dr. P., the following sentence.—“Dr. Allen thinks and says amalgam is better than gold.” Now what is the common sense construction which I supposed Dr. P. would put upon this? Why, evidently, that Dr. Allen means to say it is better than gold in those cases where he uses or recommends it, and which cases had been repeatedly pointed out in the Recorder. My object in writing the above was to show Dr. P. that he had, therefore, condemned *my practice*, in the newspapers, just as much as he had the Crawcour's. The “long letter” which he speaks of contains eight paragraphs, upon as many different subjects. If Dr. Parmly would imitate this brevity, and study as much to avoid all superfluous words, his articles would oftener find room in the Recorder.

Dr. Parmly farther says—

“You will not and dare not undertake to prove or justify what you have written. You began this personal controversy,” &c., &c.

The above extracts from his pen are submitted to “prove” that he has insulted and defamed all who use amalgam in cases where they say and believe *it to be better than gold*, and to justify the Recorder in pronouncing it an insulting and libellous circular. If it does not both “prove” and “justify,” then I frankly acknowledge that I am unable to do so. As to any personal controversy with Dr. Parmly, there has never been any in the Recorder. I have touched nothing concerning him but his published professional writings, putting such construction upon them as common sense dictated, and holding myself in readiness to adopt any other construction which Dr. Parmly chooses to put upon them in the columns of the Tribune, where they first appeared. If Dr. Parmly has any “personal controversy” with me it cannot be admitted into the Recorder.

C. C. A.

VOLUME VI. OF THE DENTAL RECORDER.

The present number commences the sixth volume of the New York Dental Recorder, and it gives us pleasure to announce to our subscribers that we shall be assisted in conducting it by Dr. A. Hill, a gentleman well known to the profession by his literary contributions to the American Journal and News Letter, as well as for the improvements which he has introduced into the practice of “Artistic Dentistry.” With his valuable assistance we hope to be able to make the Recorder

more acceptable to its readers than it has hitherto been, and to bring it out promptly at the beginning of every month.

The Dental Recorder is the only monthly periodical, devoted to the interests of the dental profession, in our country, and on this account furnishes a vehicle for more frequent communications with its subscribers. The aim of its editor has heretofore been, and will still be, to furnish practical information upon every subject connected with surgical and mechanical dentistry. With this view its pages are always open for the advocacy of any subject connected with the profession or practice of dentistry, and with this view we now solicit practical contributions from our professional brethren. It is only by comparing our different ideas upon theory and practice that we can be useful to one another, and advance the dignity and usefulness of our profession.

Many of our professional brethren are excellent operators and ingenious in new devices, but, owing to a want of practice with the pen, are unwilling to attempt to write out their views though free to communicate. To such we would say send us your ideas upon any practical subject, and we will dress them in as good style as we are capable of giving them. If we can be of any service in this way it will afford us pleasure to do so.

An apology is due to our subscribers for the late appearance of the Recorder for several months past. With the accession of another editor we trust it will not be so in future; but during the past year our engagements have been such that it has been impossible to be as punctual with its publication as is desirable.



TO THE PATRONS OF THE DENTAL RECORDER.

In assuming a position as co-editor of the N. Y. Dental Recorder, we desire to offer our cordial greetings to all its readers. The new field of labor to which we have been invited, is not altogether free of difficulties and embarrassments. Yet the subject it involves is one to which the prime of our life and the ceaseless energy of many years have been devoted. The advancement and elevation of the Dental Art has long been cherished as one of the strongest incentives to our professional activity, and has hitherto supplied the requisite stimulus to an honorable ambition.

The sentiments and feelings which have prompted our admiration for those leading spirits in the profession, whose untiring zeal has accom-

plished so much, have ever been at the foundation of our efforts in its behalf. And we now bring them, in all their freshness and vigor, to assist us in our new vocation. And we feel assured that no one, whose professional character and standing is identified with the success and progress of Dental Science, can feel altogether indifferent to the success of the enterprize in which we are about to embark. And if the character of dental literature reflects the professional character and standing of its votaries, (which we most firmly believe,) then every member of the fraternity should contribute to its elevation and advancement, to the utmost of his ability.

Our worthy compeers already in the field, are laboring with a zeal and devotion worthy of all praise, and are richly deserving the gratitude and support of the entire profession for whom they labor. In our heart therefore, we wish them success, and intend heartily and earnestly to emulate their noble efforts and devotion.

We know of no good reason why the great city of New York should not be among the first in giving character and currency to the literature of our profession, as well as in the energy and industry of its dental practitioners. And we cannot see why she should not sustain her relative influence in this respect, in the publication of *one* of the *best* periodicals devoted to the interest of the dental profession in this country. May we not then invoke the assistance and co-operation of those whose reputation and professional standing should afford us a sure guarantee for the success of our enterprize.

In our individual relations with the New York Dental Recorder, we are independent of *clique* or *party*, and desire to maintain the attitude in this particular that we now assume. And we intend that it shall be no fault of ours, if the harmonious and cordial good wishes and countenance of the members of the dental profession in this city be withheld from our support. It is not to be expected that different minds will always see the same thing in exactly the same light. But an honest difference of opinion can easily be tolerated when courteously maintained. Come, then, and let us merge all our differences in one common effort to elevate our profession.

A. H.

“STONE FILLING.”

Under this name an article has been for some months advertised by a city dentist for filling teeth. It was first introduced, we believe, by Mr. Trendelenberg, a dentist in Williamsburgh, who sells the recipe and

instructions for making and using, for a moderate sum. As prepared by him it is a very plastic substance and fills the cavity in a carious tooth apparently very well, and in a short time becomes very hard. In some cases we should think it might answer for filling shells of teeth, where it is desirable to preserve them as long as possible.

In the few cases where we have seen it, after it had been in a few months, it appeared very well, retaining its color and apparently preserving the tooth from decay. We should think it a better article to put in contact with dead dentine than amalgam.

The following recipe has been handed to us for manufacturing a similar article :

Calcined Bone pulverised and washed ; Sulphur, and Pulverized Felspar, equal parts. The sulphur is to be melted and the other articles stirred in.

We have not tried this recipe and cannot therefore say how it works. In the use of new materials like this, much depends upon the manner of working them, and on this account it is often cheaper to purchase proper instructions, where they cannot be obtained without, than to grope on in the dark. Who will furnish the Dental Recorder with a full description of the best method of combining the materials and using the "Stone Filling"?

THE NEW IMPROVEMENT IN ARTIFICIAL GUMS.

Dr. Hunter, of Cincinnati, has authorized us to announce that, in the next number of the Recorder, he "will publish the recipes for making an article in every respect equal (if not superior) to that *claimed* by Dr. John Allen, there shall be nothing *mystic* about it, but every thing shall be clear as noon day, from the preparation of the material itself to the manufacturing and applying of the coloring."

From the specimens which we have seen, of work done in this way, by both of these gentlemen, we think that this improvement promises more than any new thing which has appeared in mechanical dentistry for a long time.

THE NEW YORK COLLEGE OF DENTAL SURGEONS.—We have received the first annual announcement of the course of instruction which is to be pursued in this institution, but too late for an extended notice in the present number.

[ADVERTISEMENT.]

For the Dental Recorder.

DR. C. C. ALLEN.—Dear Sir :—As facts are always preferable to fiction, and truth to error, I deem it proper to reply to the letter of Dr. Hunter published in the last number of the Recorder, touching my method of mounting artificial teeth upon metallic plates.

Although he has carefully avoided using my name in connection with the subject, yet he has endeavored to mislead the public mind by his false insinuations that "*he knows* something of the boasted improvements in artificial gums that was exhibited at the meeting of the American Society of Dental Surgeons by one of its members."

Here he refers undoubtedly to me, for there was no other member who exhibited anything of the kind. Here allow me to state positively that he does *not know* any thing of the materials I use, my method of preparing them, or mode of application. For want of this knowledge, he soon perceived that his intended shots at me would take no effect, however much malice or envy he might put in the priming, and here he left the subject of my improvements, without conveying one correct idea about it, in consequence, as he says, of the *modus operandi* not having been explained. He then starts off upon another tract, after other game, with which he is more familiar, and says, "I take upon myself to *give* a few hints that will accomplish the *same end*," (but the plan he describes never will do it) "and although not at a cost of much *time, labor, and money*, he hopes it will be just as *thankfully* received. He seems to think that the profession is just as ready to embrace a useless thing, if it comes from *him*, as a valuable one if it comes from another. In this I think he is mistaken. The community requires of us the best services we can render, and it is our duty to adopt the best mode of practice, let it come from whence it may. But he proceeds to describe a theoretical method proposed by a Mr. Steemer, who is endeavoring from what he knows of pot enameling (that being his business) to counterfeit my improvement. After giving the *modus operandi* of the pot enameler's method, he says "it will not take several years of experience with the above information to make as good work as ever was made in that style." Here I agree with him; but he says "do not be led away with the results you may produce *untried*, for there is not that case in existence that has been worn half-a-dozen months," (no nor ever worn at all, for Steemer's pot enamel plan is only theoretical, not practical,) "that length of time not having yet elapsed since *the* recipe was first offered for sale to the profession, by Mr. Steemer, who

has been engaged for some time in making iron ware for a firm in this city." In this Dr. Hunter is correct, for it is not *three* months since Steemer first offered his pot enamel recipe for sale, and there has not yet ever been a tooth set in that way, for Steemer never set a tooth in any way in his life, and no practical dentist ever has, upon his plan, that is certain. Steemer, in order to make his *stuff* and conceived plan take, represented it as being the same as *mine*, and upon these false representations one dentist was induced to try it, and to this fact Steemer alludes in offering it to the profession, and see below what that dentist says of it under oath.* I should not have referred to that portion of Dr. Hunter's letter touching Steemer and his pot enamel, if he had not attempted to convey the idea that his (Steemer's) and mine were the same; but he might as well undertake to mix oil and water, as to mix up Steemer's plan with mine, for they are as widely different as the east is from the west. Of this I speak advisedly, for of the thousand and one fruitless experiments I have tried within the last few years in prosecuting my investigations, the stuff referred to by Hunter has been scanned with the same close scrutiny of all the rest, and thrown aside as useless for dental purposes—and it is upon this *flimsy* basis that Dr. Hunter has predicated his remarks.

Let it be born in mind that the records of the patent office at Washington, together with an abundance of other testimony will fully substantiate my legitimate claim to my own invention, bearing date at least six months prior to Steemer's attempted counterfeit with his pot enamel, upon which Dr. Hunter lays so much stress. Respectfully,

J. ALLEN.

* I hereby certify, that I am the person referred to by Mr. Steemer, in his advertisement to the Dentists of the United States of America, as having acquired a knowledge of his alleged invention for mounting artificial teeth upon metallic plates; and that I found *his* method to be of no earthly use for dental purposes. I found that he knew nothing of the dental business, or of what was required for artificial dentures; and that I then went to Dr. Allen, and acquired a knowledge of *his* method, which I found to be entirely different as regards the compound used and the mode of application. I would further state, that with Dr. Allen's new method I am well pleased, and believe it the best now in use.

E. G. DARLING.

Boston, Suffolk ss. October 21, 1851.

There personally appeared E. G. Darling, who subscribed and made oath to the above, before me,

J. WINGATE THORNTON,

Justice of the Peace.

NEW YORK DENTAL RECORDER.

Devoted to the Theory and Practice of
SURGICAL, MEDICAL, AND MECHANICAL DENTISTRY.

Vol. VI.

NOVEMBER, 1851.

No. II.

DISCUSSIONS IN THE AMERICAN SOCIETY OF DENTAL SURGEONS.

In the August number of the Recorder we gave a tolerably full report of the proceedings at the late meeting of this Society—stating, that the “Aphorisms” of Mr. E. J. Dunning “resulted in quite a lengthy and exceedingly interesting discussion of the whole matter of treating the exposed nervous pulps, involving the subject of using arsenic and its concomitants, and the different modes of its preparation and application.” The following is the discussion as reported in the News Letter, which we commend to the attention of our readers as instructive, entertaining, and, in some points, exceedingly “rich.”

It is to be regretted that the speakers did not correct the report of their remarks before publication, as there are many errors which conflict with syntax, and in some cases obscure the meaning of the sentences. It is not usual, we believe, for persons accustomed to public speaking to allow their speeches to go to press without their own correction, and those who seldom speak should certainly not permit theirs to be printed until they have had an opportunity to correct them, as a *lapsus linguae* will frequently change the meaning of a whole sentence, and besides this, there is always a liability that what one does say may be misreported. We publish it as found in the News Letter.

We are pleased with the decided stand which some of the younger members took in the defence of their opinions upon the subject of the use of arsenic, and would here remark that as the *abuse* of arsenic, formerly, is no good reason, even in the opinion of the President, why it should not be judiciously used now, so neither is the abuse of amalgam by quacks any good reason why skillful, well educated dentists should not use it if they choose, without having their “integrity” called in question. We hope to see the day when the American Society of Dental Surgeons will return to consistency on this subject, and when proscriptive rules of practice, about which there is an honest difference of opinion, may be either “expunged” or repealed from their records.

—N. Y. Editor.

WEDNESDAY, NINE O'CLOCK, A. M.

President.—The remaining portion of our time will be occupied with discussions, and the first thing before us* is a paper read by Dr. Dunning yesterday.*

Dr. Dunning.—I will state for the information of gentlemen not present yesterday that there are a few short remarks intended to give the views of the Society when they have been digested by it, upon the subject of treating *exposed nerves*.

Dr. Arthur.—In regard to the first *Aphorism* there is known to be a difference of opinion in the profession, and I think it would be satisfactory to endeavor to ascertain what is the state of opinion in the Society with regard to it. I propose therefore that members state their opinions on this subject.

Dr. Westcott.—I would like to ask whether one class of cases which are not mentioned here, was neglected intentionally or through oversight. I refer to cases where the nerve is in a state of absolute decomposition, the tooth containing only a semi-fluid substance.

Dr. Dunning.—I merely speak of cases where the nerve is exposed, and where the destruction of the nerve is a part of the operation.

Dr. Arthur.—I would state that for a number of years I have been satisfied of the utility of this operation, and have practised it frequently without hesitation. When a person presents himself with the pulp of a tooth exposed and in a healthy condition, I am so confident of success that I hardly think it necessary to state to him that there is more than a remote possibility of failure.

Dr. White.—Is it meant by "permanently saved" that the tooth will be retained in the mouth as well as any other tooth?

Dr. Arthur.—I am not prepared to say. By permanently saved, I mean that the tooth so treated will remain in a healthy condition for a great many years, an indefinite time.

Dr. Dunning.—None of us would be able to testify to the satisfaction of this meeting on that subject, but my feeling when I am called upon to treat such cases is entirely similar to that of Dr. Arthur's. I have treated such cases for ten years, and I was led to treat them in that way by Dr. Maynard of Washington, and he, so far as I am concerned, was the originator of it. For many of the first years of my practice it was always a matter of doubt and uncertainty, and I did it with a great deal of hesitation, which I always took great care to express to the patient, that he might be made to go halves with me in the risk, and might feel, if there should be a failure, that he had not been deceived. But for some four, five or six years past, I have lost a great deal of the feeling on the subject, and when the nerve is exposed, I have the same certainty as to the degree of success that I can attain in a given case, as I have in any ordinary operation; as, for instance, plugging a tooth; and

* The Aphorisms offered by Dr. Dunning were not furnished to the reporter, but the substance of the two first, and most important, are as follows: "A tooth whose nerve is exposed, may be permanently saved by entirely removing the pulp and filling the place occupied by it with gold."

I can say, and those who have been acquainted with my practice can bear me out, that I have failed in as few cases in this operation as the profession generally fail in any operation connected with the art. With regard to the permanency of it, I have not as yet, fully tested it. Various accidents have befallen such teeth; sometimes there will be, in the course of four or five years, the formation of an abscess which may have arisen from accidental causes, but there are many cases which I can call to mind, in which teeth have been treated in this way, and have continued four, five, and six years, without any abscess or ulceration, and where no discharge has taken place whatever.

Dr. White.—I only want to push my inquiries a little further. It seems to me the first proposition is the most important one, for it settles the point that it is proper and right to destroy the nerve. I am as willing to destroy the nerve as any one, yet this Aphorism would seem to imply, that that was the *only* method of saving the tooth. I have seen teeth treated as well where the nerve was not destroyed, as where it was; I have seen a case where a tooth was plugged twenty-five years over the nerve. I would like to have it more clearly established what is meant by this Aphorism, whether it means that the destruction of the nerve is the only treatment; or is it probable that we can frequently succeed without it.

Dr. J. Allen.—With reference to capping nerves, my experience does not tally with that of Dr. White, to the extent that he has mentioned. I have not been very successful in that course of treatment. I usually destroy the lining membrane of the tooth, by a fine, small elastic instrument, so that I can cut it out at once. I prefer removing as large a portion of the lining membrane as possible. If there is only one fang, I can, generally, treat it successfully; if there are two, I have found more uncertainty in the operation; it is more difficult to cut out the lining membrane. If I find a tooth where the nerve is just exposed, I can treat it with success and confidence. The question arises, whether we can regard that as a permanent operation. I think in many cases we shall find that, after a few years, (frequently it will stand ten or fourteen years,) then an abscess will be formed, the fang is diseased and loosened. Can we regard that as permanent? So with regard to a plug put in a tooth, can we regard it as a permanent preservation of the tooth? I am under the impression that we cannot, though, in a majority of cases, where the nerve is just exposed, I believe such a tooth can be rendered useful for a number of years.

President.—I would remark, in reference to this Aphorism, which reads thus: "A tooth, the nerve of which is exposed, may be permanently saved,"—that the question now comes up, what does this mean—whether it is five, ten, or fifty years? A tooth may be successfully saved, we know, and for many years; for I have seen many instances in which the success has been most complete, but whether it will last as long as life will last, the experience of none of us can establish. It is not many years since, in the practice of dental surgery, that it was thought, when the nerve was exposed that the tooth was lost; but now, in our improved state of knowledge, we find that when a nerve is ex-

posed, a tooth may be successfully, and, as far as our experience goes, can be permanently saved. The points we have now to consider are : what has been the experience in relation to the success of those who have practised it for the longest period of time, and what has been the success in the greatest number of operations.

Dr. Foster.—As far as my experience is concerned, I can only say, in regard to the exposure of nerves, that it has been my custom, where inflammation has been produced, never to attempt it under those circumstances. But where the nerve is exposed, or nearly so, but not sufficient to produce pain in the tooth, I have employed a cap to great advantage in a majority of cases. In cases where I have employed the probe, or other small cutting instrument, for the entire removal of the pulp, I have generally been successful ; but where I have employed arsenic or cobalt, I have always felt extreme doubt as to the successful termination of that operation ; but where I could use the instrument, I do not think a single case has come under my observation where suppuration has ensued, though there has sometimes been a slight inflammation. One of my instructors, Dr. Harwood, of Boston, not having read what was published on the excision of the nerve, previous to his return to the profession, made a publication, or a publication was made, of a discovery supposed to have been made by him on that subject, through which it has been his fortune, whether good or bad I will not say, to perform that operation probably more than any other man in the community for the last two years. I think he told me more than a hundred times in the latter part of the last year, and this year, I think, about seventy times. This is pretty extensive practice for that kind of operation. He said he had been successful, I think, with but two or three exceptions. Inflammation had not ensued, suppuration had not ensued, and he was still continuing to receive a great many of these cases. As far as my experience goes, in respect to the preservation of the teeth, under these circumstances, I can only say, that I believe that where that operation is thoroughly and well performed, the tooth is as likely to last as any living tooth, filled under ordinary circumstances. I think the chance of failure is less than with many living teeth, where the operator is obliged to take so much pains in the operation ; and in all cases I would recommend excision in preference to the other.

Dr. Cone.—The question arises, whether the teeth of patients, under all circumstances of age and pathological conditions, should be equally treated, and if so, will there be equal success ? Is there not a difference ? Is a tooth in a young patient treated with the same degree of success and permanency, as in a patient of middle age ? Has the previous condition of the health of the tooth any thing to do with the permanency or success of the operation ? Also has the relative condition of the tooth with its neighbors any thing to do with it ? These thoughts I throw out to get the opinion of the members present.

Dr. Westcott.—Mr. Chairman, I must say I am glad this particular subject has been selected for our discussion this morning ; not merely from its importance, but from the fact that there has been a great deal of discordant testimony upon it by different and by the same individuals.

I happen to be one of those same men. It is well known to many of you, that this is a subject upon which I had formerly written somewhat. Since then my views have been somewhat modified; and these convictions have arisen, not merely from greater experience on my part, but more from the enlightened experience of my friends, to whom I am much indebted for such information, Dr. Maynard particularly. Yet, with all that I have been enabled to gather, both from the experience of others and my own, I confess that I look upon the operation of destroying nerves with arsenic, not with that same degree of certainty that Dr. Dunning has expressed. The plan I then proposed was the excision, which has been talked of as a substitute; and I now say, that, if we could but lay aside the painfulness of the operation, I prefer it by far to any other method of destroying the nerve. I think that if a live nerve is cut off at its upper end, the remaining portion has the power of taking care of itself. I do occasionally, and quite frequently—seemingly from being absolutely compelled to do so—employ arsenic or cobalt to destroy the nerve, but I confess never with the same success as by the other method. I wish to make a general remark upon the subject, with reference to the first two aphorisms. It occurs to me that they might be put into one, and could cover all that we are authorized to cover. We can do little but give our respective practices. For me to say that nerves should never be destroyed, would not be right; and for another to say they should, I can hardly agree to. The truth is, that every man's practice is thoroughly modified by the circumstances peculiar to his own practice, though done upon general principles, that I have long since ceased to condemn processes. Give me the result; let the result come out right, and I will accord to every man his own process. For instance, Dr. Dunning's practice is made up of the first class of patients in New York—persons, without exception, that take the utmost care of their teeth. He probably does not perform an operation on a single individual who does not care for his teeth with the utmost scrupulousness. This cannot be so in a country practice. I practice in a small city, but my practice, in the one-half, is made up of persons in the surrounding country. For me to take the position that I would not operate on any one who did not take such care of his teeth as I should dictate, would be to cut off one-half of my practice, though in some extreme cases I have done it. My practice is very much modified by this circumstance—different from what Dr. Dunning's practice would be. I then feel that about all we can do upon this occasion is for each to give his own practice, and the reasons for it; and I would be glad if the aphorism should be so worded as to admit of the question being an open one hereafter. Nevertheless, opinions and practices might be so given as to serve as a strong guide to the young practitioner.

One of these aphorisms reads that a tooth may be permanently saved when the nerve is exposed, and another that the vitality of the pulp must be destroyed. We could make them read in this way: A tooth, whose nerve is exposed, may be successfully saved. And if these aphorisms are intended to bear particularly upon the destruction of the

pulp, it may read simply—"successfully saved by the destruction of the pulp."

In respect to Dr. Foster's testimony, I don't remember precisely when Dr. Dunning and myself commenced this. It must be eight or nine years ago. We treated mutually and jointly, all our cases, being in the same office. We treated with the probe, and I must say that, so far as my experience has gone since that period—and it is proper here to observe that Dr. Dunning and myself diverge—I have found the use of the probe not merely practicable, and practicable upon timid patients, but I have to say, so far as ultimate results are concerned, it was far more certain of warding off future inflammation. My practice has been to remove the nerve and at once plug the tooth with gold with a delicate instrument, which shall go as far as possible to the point where the nerve has been excised; and when I do this in my own way, I have very little fear of inflammation supervening in a healthy mouth that is taken care of. But I do resort—seemingly from necessity, and that necessity based upon the feelings of the patient—to the use of arsenic, in some way or other, to destroy the nerve, and frequently with tolerable success—it being true that the result of these operations depends much on extrinsic circumstances, which the dentist cannot control.

In regard to capping nerves, I confess I never had any success in it. This may be humiliating—it may be tantamount to saying that I do not know how to do it; but I have tried it, and have not been successful. It is something that is important in the extreme, and I shall be most thankful to any gentleman who will so place it before my mind that I may be successful hereafter on the capping system—that is, leaving the nerve entire.

I close by observing that if these first two aphorisms could be so shaped as to include the fact that a tooth might be successfully treated, for I should not be safe in using the word permanently, as it might give a false impression to the public,—I think the word permanently should be supplied by the word successfully, and then so shape them as not to convey the idea that this is the only way in which exposed nerves may be treated, leaving the other an open question—leaving us to accumulate all the light we can. If we can save nerves,—I think they were made for a good purpose,—let us do it. In Combe's Constitution there is an illustration which shows the necessity of having nerves, and I think they are a very good accompaniment to the human system; and if we can save them in their normal condition, I feel that it is an important thing. I rose in reference to these two aphorisms, and I wish that they may be so shaped that they need not necessarily carry the idea that this is the only method of accomplishing the end.

Dr. Dunning.—In regard to the aphorisms, I would remark, that I consider them entirely the property of the society, and that they have been written in such haste that, on the contrary from feeling any pride in the construction of them, I feel a desire that the society should remodel them entirely, for I see many points, myself, that need it; and I hope that members will not feel the slightest hesitation in proposing any change that is required. In two places in Dr. Westcott's remarks,

he refers to the nature of the practice of different individuals, as affecting the operation; but, with regard to my own practice, I wish to say that it is not among those whom I regularly attend, and who take the best care of their teeth, that I am called upon to perform this operation. It is often the case that I am obliged to remove decayed teeth and roots, that I think should be taken from the mouth, to bring it into a proper state. I think I have not, in the aphorism, properly illustrated my own views. I prefer, myself, the surgical operation, whenever it can be used. I have universally practised it in the incisors and very commonly in bicuspidés, and sometimes in the molars. With regard to the capping system, I have not practiced it, because I dare not. I have no doubt, from the testimony I have received, that it is successfully performed; and I think it is the highest success of the art. But I have seen many cases where the operation has been performed, and the nerve has evidently died, perhaps without even the patient's being aware of it, and the tooth has been left in a position in which it is very difficult to save it comfortably to the patient; and for this reason I have been afraid to do it.

Dr. Bridges.—I was very much pleased to hear some of Dr. Westcott's remarks, because it gave me an opportunity of saying a word. About nine years ago this arsenic question came up, and my friend Dr. Westcott said, in my hearing, he considered it a matter of humbuggery, and the man a humbug who used arsenic for killing the nerve of the tooth. He said he considered it malpractice. Since that time I have taken another view of the subject, and yet I have frequently used arsenic, and sometimes a red hot iron, with great success. After the condemnation of arsenic by most of the prominent members of the society, I had a conversation with Dr. Hill, and he and I concluded that mere cologne or alcohol applied to the nerve, for an hour or two, would so paralyze it that we could fill the tooth; and I practised that in ten cases out of twelve. In applying the hot iron, I found that if it cooled any it produced inflammation, but if it was red hot I most invariably met with success. I do not recommend this practice; but the other way of applying alcohol or cologne I have had very good success in. I should like to know if others, who have applied the same remedy, have been successful. I was very much delighted that Dr. Westcott gave me an opportunity of explaining this thing, for I felt much hurt at the time, and since then I find that he has changed his views on the subject of arsenic. And I heard you say once, Mr. President, that you would put down the man who used arsenic with the man who used amalgam.

I think in some cases arsenic can be used with great success—where the pain is very acute and the nerve has been exposed for a long time. It is a very painful operation to excise the nerve, and in that case I would recommend an application of cotton, and afterwards moisten it with kreosote, and then put soft wax over it and let it remain from four hours to a day, and the nerve may bleed whenever you touch it, but the feeling is so far gone that you can do it with little pain. Dr. Westcott said that when he excised the nerve, there was very little danger of

inflammation supervening in the remaining part. I would wish to know what is meant by the remaining part.

Dr. Westcott.—I mean that the nerve stops somewhere and connects with the main branch, and if not cut off at the root of the tooth, it is as near that as possible, though not to it.

Dr. Bridges.—I would like to hear what Dr. Hill has to say about the application of cologne and alcohol.

Dr. Hill.—I had forgotten the circumstances till they were mentioned, but I now remember them. Many years ago, before this subject was discussed among dentists, and when I was, like most other gentlemen practicing the profession, in the dark in this matter,—left to follow my own judgment as best I might with the light I could gather,—I had, like the rest of them, no definite idea of the mode of practice, and no distinct and certain knowledge as to the results that might follow an operation of this kind. I remember that, years ago, in a case of that kind, I would uncap the nerve so that it would bleed—I would excavate all around the nerve as well as I could, and leave the nerve as slightly touched as the nerve would allow; and very often I would find it bleeding, and I would take a small instrument and make it bleed, and if there was sensibility, the most convenient thing I could use was a little cologne or alcohol, and sometimes I have used tinct. of myrrh—and after wiping the cavity dry, put in my filling. In treating them in that way, a large proportion have been successful, and have been saved for a number of years; but I have noticed in some cases that suppuration has taken place. I early imbibed a dislike to the practice of using arsenic. When the subject was first presented to me, it struck me unfavorably. I did not doubt that in some cases it would successfully destroy the nerve, so that the tooth might be filled, but it seemed to me to be a dangerous practice, and I have used it in but very few instances. My ordinary treatment is that described by Dr. Foster. My preference is for that mode, decidedly. I have no doubt in my own mind that, in many cases, the nerve may be capped successfully. My own experience has demonstrated it to me; for though I did not operate upon that principle, yet I made the nerve bleed and let it contract, and then I could save the tooth—and it was virtually done by capping, though capping was little known then. In most cases, however, I destroy the nerve in the manner described by Dr. Westcott.

The President—An explanation is necessary of the remark made by me, which has been alluded to by Dr. Bridges. I have as strong an objection to the use of arsenic to-day, in the way it was used then, as I had on the day the remark was made. I opposed it strongly, as it was used to destroy the sensibility of the tooth, leaving the nerve in a paralysed condition; and it generally resulted in suppuration and loss of the tooth. But it is used now to paralyse the nerve, so that it may be successfully removed afterwards. It is thus, I presume, that all who are successful in their operations, use arsenic. But to place a pill of arsenic in the tooth, destroying its sensibility for a time, and then filling immediately upon that mass of impurity and cause of disease, is a thing which I objected to then and object to now;—but having had the man-

ner explained to me by Dr. Maynard, I have had success in using it in that way. But we all agree that excision is decidedly the most successful method, and that arsenic should never be used, unless the whole portion, so destroyed, is removed afterwards, and the cavity of the tooth completely filled. I wished to make this explanation, that there might not be an erroneous impression abroad.

Dr. Westcott.—I would like to make a similar explanation. I think there must have been some mistake in regard to the general sweeping assertion that Dr. Bridges said I made. It is true that, as I then looked upon it, it was, to say the least of it, generally in quacks' hands. I think, if Dr. Bridges will recall the circumstances, he will modify it. My temperament, I know, is rather an ardent one, but I have no remembrance of ever saying that a man could not possibly use a certain thing without being a quack. That is going a good ways. But I am ready to say that the head and front of all the quackery that comes to my knowledge is from the use of arsenic. I look upon it as detestable under all circumstances where the object is merely to destroy the sensibility of the tooth; but the precautions and means are so much better understood now than when the remark was made, that I think it is comparatively safe.

Dr. Arthur.—I desire that a remark of the President may be so modified as not to leave the impression that he was giving the views of the society. He said, "we all agree that excision," without the previous use of any substance to destroy the vitality of the pulp, "is the most successful method."

The *President.*—I did not mean to convey the idea that we, as a society, but that Dr. Dunning and myself thought so.

TO BE CONTINUED.

For the Dental Recorder.

DR. JOHN ALLEN'S IMPROVEMENT.

DR. C. C. ALLEN.—My Dear Sir: Some months have elapsed since Dr. John Allen, of Cincinnati, Ohio, brought out for the inspection of the Dental profession, an original plan of constructing artificial teeth with gums.

There has been no great display, no very loud trumpeting, nor yet "boasting," in bringing this new method of Dr. A's. by himself, before the profession. He has "come out," with as much modesty, as much candor and as much fairness as the most stringent laws of professional etiquette could demand of him.

After experimenting for years (as he says) he finally succeeded in results that gave him entire confidence in the superiority of his new method, over every mode in practice for the same purpose.

Dr. Allen now exhibits his invention to the Mississippi Valley Asso-

ciation of Dental Surgeons, and submits to them several specimens of plates mounted by the new method, which he minutely describes, and, at the same time, gives them full liberty to test in many ways.

With a promptitude and fairness perfectly characteristic of our western brethren, a committee was appointed immediately, with the special duty assigned, of examining critically, and testing thoroughly the utility and practicability of the new system before them, in specimens of artificial dentistry.

The report of that committee has already been published in the Recorder, and I only call the attention of your readers to it, to remind them that, that committee was mainly composed of Cincinnati dentists, competitors of Dr. Allen.

There is an open frankness, a manliness about that report, that I cannot but admire. When I see two such men as Dr. Taylor and Dr. Godard, professional men of their standing in society, set aside all interested motives, and award to a competitor the honor of having discovered a plan by which artificial or mechanical dentistry is in their opinion to be renovated, I cannot but admire their candor.

Dr. Hunter, a dental competitor of Dr. Allen in Cincinnati, writes a letter to the Recorder, in such an invidious and bad spirit that I may ask a few questions in relation to it.

Was it fair and kind in Dr. Hunter to forestall professional opinion, by an expose perfectly at variance with the true state of the case in question? Was it kind and fair in Dr. Hunter, to give, unasked, by the profession, his "few hints," which, if not true, would tend to bias them against what candid and fair critics have called an "important improvement," and "recommend to the profession as worthy of their attention"? Was it honest in Dr. Hunter to *give* to the profession, that which (from his own acknowledgement) belongs to the inventor, Mr. Steemer, who advertises to *sell* it to the profession? A blind man can see that Dr. Hunter's communication was begotten and brought forth in envy.

Now to the point—the improvement. It is about two months since we (Dr. Smith and myself,) became acquainted with the *modus operandi* of constructing sets of teeth by Dr. Allen's new plan, and with his recipes for compounding the materials for his body and gum. We have supplied several entire sets of upper dentures by this method, and very much to our satisfaction. The great difficulty to be overcome at the present time is the want of suitable teeth. Teeth for this plan should

be made entirely different from those ordinarily used.* There is still another obstacle to the full success of this system, viz: so high a heat is required to fuse the material, as to make it quite uncertain about using gold for plates. Gold perfectly pure can be used with perfect safety, but alloyed with any other metal, except p'atinum, it will melt before the material fuses. (I think common eighteen carat gold will stand the heat required to fuse "*glass Borax* and Pot Enamel.") We have so far made our plates of platinum, and can see no possible objection to this metal. If the color is objectionable, it can be galvanized and so plated with pure gold as to last for years without change. We are preparing pure gold for some plates which we hope to answer every purpose. We are satisfied that it will stand all the heat required, but have not the most perfect confidence in its elasticity. However, our confidence in the entire success of the system is unshaken, and in the language of Dr. Allen would say to the profession, "Only manifest half the patience in the prosecution of your labors in this work, that you have heretofore in the manufacture of block-work, and I will guarantee perfect success." Many of the best practitioners in artificial dentistry, have been for the past two years using pure tin, as the entire base for under sets of teeth. I have never for a moment thought this plan worthy of an experiment. I should prefer "pot enamel" if I thought it would stand the action of the saliva, (but do not think it will, as acid not highly concentrated will dissolve it) to the tin base. It looks too cheap for such purposes, and is highly objectionable on this account if no other.

Respectfully yours,

MARTIN K. BRIDGES,
109 Henry Street.

Brooklyn, Oct. 27th, 1851.

SETTING TEETH ON PIVOTS.

Of all the modes hitherto adopted for supplying the place of natural teeth with artificial substitutes, we must regard this method of pivoting, when properly performed, as the *very best*. Of course, these remarks can only apply to the incisor and cuspid teeth. And why it is regarded by so many in the profession as an unimportant and almost useless operation, (unless because of its extreme simplicity) we are at a loss to determine. We may be laboring under some error or misapprehen-

* I understand that the manufacturers of teeth, especially Messrs Jones, White & McCurdy, have under way a large quantity of teeth from patterns made for this express work.

sion upon this subject, and if so, we would thank the profession to set us right. But according to our observation, the practice has become quite too common, of using plates, where teeth might be pivoted, much more advantageously, both with respect to their comfort and utility, as well as cost to the patient.

Instances are by no means rare, where strong healthy fangs have been removed, to make way for a plate, where the *front teeth only* were to be substituted. This, we can but regard as decidedly wrong—and, under the circumstances, *mal-practice*. For who will contend, where three or four front teeth are needed, and the fangs are strong and healthy, that pivot teeth, are not *much* the best in every particular?

We hold it indisputable, that if teeth could be as well secured without plates, as with them, plates would not be used by the profession. But we submit to them as to a necessary evil, for the want of a better mode of setting teeth, except in the cases above referred to. But, in *such* cases, the following are among the advantages of pivot teeth.

When well fitted, and firmly inserted, they are *most* like the natural organs of any artificial teeth that can be used.

They are more useful, and more healthy.

They interfere much less with the organ of taste, and are more cleanly.

The constant accumulation of particles of food and other matter around plates to which artificial teeth are attached when worn in the mouth, serve to render them offensive and unhealthy, and the strictest attention to cleanliness can only prevent the disagreeable consequences here alluded to.

But pivot teeth, when nicely adjusted to a healthy fang are much less troublesome in this regard, and present no obstacle to the gustatory sensations. But that which constitutes the greatest objection to plates for front teeth, is the use of clasps to retain them in their proper position. As these clasps or bands will inevitably destroy the teeth to which they are secured, and thus impose upon the patient the absolute necessity of procuring a new set of teeth, in a very few years. Whereas, pivot teeth would have answered a better purpose—prevented the loss of those teeth to which the clasps were secured, and could have been furnished at less expense.

For these reasons, therefore, we must deprecate the practice of removing good healthy fangs to make way for a plate, when the front teeth only are to be substituted. Believing as we do, that pivot teeth, properly inserted, are *altogether preferable*, under such circumstances.

The duration of teeth inserted in this way, must of course depend upon the circumstances of the case with each individual. But we have found their average duration under favorable auspices, to be some ten or twelve years. Of course, where so much depends upon constitutional health, and personal care, this period must vary to some considerable extent.

While upon this subject our readers will excuse us for naming what we have found to be an improvement, where wood pivots are used, viz: the use of *Locust*, instead of *Hickory*.

We do not hesitate to say, that this makes one of the best pivots that can be used, and is vastly superior to Hickory for this purpose.

It is not our intention at present, to write an elaborate treatise on the subject of pivot teeth, but to call attention to what we deem a great mistake on the part of many Dentists, in wantonly sacrificing the fangs of teeth, where they can be used as above hinted. A. H.

EXTRACT FROM A SUBSCRIBER'S LETTER.

"You will recollect that in your remarks upon a former letter of mine (in Vol. 4, No. 7,) you said that you did not like my mode of executing partial sets of teeth, with clasps, but greatly preferred some other man's (a Georgian's, I think,) because he put himself to a great deal more trouble, in doing his work, than I did. Now I think you will admit, that such a thing, as—*what we call*—a perfect impression of the mouth may be taken, and if so, can you show any *good reasons* why a plate of clasps, *well fitted* to such an impression or cast, will not fit the mouth as well or *better* than any other mode of practice. *The great matter is in taking a correct impression.*

"Permit me, in conclusion, to return you my sincere thanks for the many and very useful hints and suggestions, as well as the large amount of *invaluable* information, which I, in common with your other subscribers, receive from a perusal of 'The Dental Recorder.'

"Your friend, J. F."

Remarks upon the Above.

We do not know what our friend *calls* "a perfect impression of the mouth," but we know that we have never been able to take one in wax from which we could make a fac simile in plaster. There are many difficulties in the way of accomplishing it.

In the first place, the lingual surfaces of the bicuspidæ and molares,

(to one or the other of which clasps are usually attached,) are convex both longitudinally and transversely, which prevents all that portion of these teeth, above the most prominent part of the convex surface, from being copied in plaster, as the wax must be drawn, by removing it from the mouth, so that the neck of the tooth, to which we desire to fit a clasp will be represented in plaster as large as the largest part of it. We cannot, therefore, determine by examining the plaster model where the largest part of the tooth is, and this is the part to which the clasp should always be fitted.

Again, the gum is a soft cushion like substance, yielding in some mouths, under the pressure of the plate, much more than in others. Now, suppose the clasp, in a short bicuspid, is fitted upon the plaster cast to the largest part of the tooth, and the gum is not very hard and firm—when the plate is put in the mouth and worn a short time, the gum, yielding under pressure allows the clasp to pass up around the neck of the tooth, where it soon creates an inflammation in the gum and investing membrane of the fang, by which the tooth is soon diseased and loosened in the alveolus. These cases are very common when plates with clasps have been worn but a short time: but if the clasps had been fitted in the mouth while the plate was pressed firmly into its proper position, this difficulty could not arise without considerable absorption of the gum.

If the teeth to which the clasps are to be fitted incline towards each other, the wax will draw while removing it, so that they will be represented in the model as parallel. The same dissimilarity between the teeth in the mouth and as represented in the plaster model, will exist, if one inclines backwards and the other forwards. But the most common difficulty is where the teeth to be clasped, diverge. In such a case, if the clasps are fitted to, and soldered upon the plaster model, when the plate is put in the mouth, the slightest yielding of the gum will cause the clasps to press hardest upon the teeth and force them farther apart. This is a fruitful source of mischief, and has ruined hundreds of teeth years sooner than they would have been destroyed, if the clasps had been properly fitted to them. In almost every case where we fit and solder the clasps by the plaster model, without trying them first in the mouth, they press hardest upon the lingual convexity of the teeth, preventing the ends of the plate from coming in contact with the gum, until the inside of the clasps are cut or filed away. This is always the case if the teeth diverge in the slightest degree, as the plate will always go up further in the mouth than on the model.

Besides all these difficulties there is but little if any thing gained by fitting and working by the plaster model. It takes no longer to fit to the mouth if the patient be present, and those who desire artificial teeth are generally willing to give the dentist all the time which he desires, and attend upon him as frequently as is necessary.

In simple cases where the gums are firm and unyielding, and the teeth to be clasped to stand parallel, there will be but little risk in fitting and soldering by the plaster model alone: but where the teeth diverge, or are in the least irregular, we always fit by the mouth. The plan of the "Georgian," alluded to by our correspondent was that of Mr. Fogle described by Mr. C. T. Cushman, which consisted of temporary fastenings allowing the clasps to be placed upon the teeth in the mouth in any desired position, and holding them there until they were soldered. This is a very excellent plan, but the one which we usually adopt is to stick the clasp to the plate, after it has been fitted by the plaster model, with a little sealing wax, and then try it in the mouth. If it is right, all's well, if not, by means of a small piece of iron heated in the spirit lamp the wax may be softened and the clasp moved in any desired direction, while in the mouth. If the wax breaks while removing the plate, the fracture will show where to place it in the same position which it occupied while in the mouth, with the clasp around the tooth. It must then be secured by plaster and sand, the wax removed and the clasp soldered.

In this way the clasps may be perfectly fitted to the teeth, and in almost as short a time as it would take to solder upon the plaster model. There will be no danger of their pressing the teeth apart or drawing them together, but the fit will be as perfect as it is possible to make it. Notwithstanding very good work may be done by a skillful mechanical dentist, almost entirely by the plaster model, yet it should be born in mind that the difference between a very good and a very bad piece often depends upon some little trifling thing, and as all should recollect, *the very best artificial teeth are poor enough*, we should by no means neglect any step in our operations which will facilitate the accomplishment of the desired object.

We have chosen to reply to our correspondent through the Recorder, because the subject is of common interest to all practicing dentists, and if there are any who know of a better plan than we have described, we should be pleased to publish it, if he will give us a description of it. We once knew of a traveling dentist, who took impressions with wax upon the end of a shingle, and sent them to the city to a mechanical

workman to construct the plates and fit the clasps and teeth. The next day they were returned, "by express," and found to fit the mouth *admirably*! But, with all respect for such rapid workmen, we must say that we much prefer the *good workman*.—*N. Y. Ed.*

EDITORIAL NOTICES.

The "AMERICAN JOURNAL OF DENTAL SCIENCE" for October, came to hand laden with much that is useful, instructive and interesting to the Dental profession. This work, which we have regularly taken since the issue of the first number, we always welcome with the greatest cordiality, and should accordingly regret any circumstance, that might chance to deprive us of the privilege of its perusal.

Under the management of its present able editors, we esteem it a credit to the profession, and an indispensable acquisition to the library of every dentist.

The October number of the Journal, contains a paper (No. 3 of a series,) from the pen of Robert Arthur, D. D. S., upon the "Treatment of Dental Caries, &c." in which the author contends with much plausibility, and to us it seems conclusively, that it is not absolutely indispensable to the saving of a carious tooth, that *every particle* of carious matter should be removed from the cavity. He says, "I deny, positively, the truth of the statement so often made, that caries of the teeth will always continue to progress, after it has once set in, unless every particle of the decayed bone be removed from that which is healthy."

Now it must be confessed, that this is very strong language, when applied to a doctrine so generally received by the profession as this, and scarcely ever called in question before. But the reader of his article will see that it is the result of a very critical examination of the subject, and a close and conclusive chain of argumentation upon the cause of Dental Caries. And if this view of the matter is sustained, it cannot fail to change the mode of treatment with respect to a very important class of dental operations. For upon this hypothesis, the living, healthy pulp of many a tooth may be preserved, that might otherwise be destroyed, by refusing to remove the softened layer of bone immediately covering the dental pulp. Dr. Arthur wields a vigorous pen, and we hail his contributions to the cause of Dental Science and literature, as among the most valuable acquisitions of the present day.

(ARTICLE 2 and 3, are by Dr. A. Hill. The first was published in

our last number, and will speak for itself. The second is an interesting essay upon the subject of depositing plates for artificial teeth by the galvanic process. Dr. Hill thinks that this process may be made available, and that it may yet supercede the necessity of all castings, swaging, &c., and thereby relieve the dentist of most of the unpleasant part of mechanical dentistry. He has succeeded in forming plates in this way, one of which has been worn more than a year. To make this method available and completely successful in the hands of the dentist, requires considerable practice and more experimental research than it has yet received, as very much depends upon nice manipulation and a thorough knowledge of the principles of electro-galvanism.—*N. Y. Ed.*)

ARTICLE 4 in the Journal is an "Essay on professional empiricism," from the pen of Dr. A. C. Hawes, of Providence, R. I., in which the foul "tricks of the trade" are exposed in an able manner, and laid open to the gaze of the profession and the world.

We can but regret the necessity of such an *expose*. Yet we have witnessed enough in our brief day, to justify much greater severity in dealing with professional mountebanks than the doctor here indulges in. The moral and professional delinquencies which occasionally call forth such a withering rebuke and wholesome chastisement as is here administered, are abundantly obvious among Dentists. And Dr. Hawes well deserves the thanks of every honorable and high-minded member of the profession, for the service here rendered. For we venture the assertion, that every such individual who has seen a few years practice, has again and again felt his cheeks burn with very shame at the reproach cast upon the profession by the conduct of these miserable harpies.

In the course of his remarks the doctor tells the following story, which is too good to be lost, as it finely illustrates the "*suction principle*."

"Dr. Berry, of Newport, informed me that a lady one day called on him, who had a tooth inserted on the root of another, and desired him to insert a second in the same manner, asserting that it had been in for nearly a year, and that she had never had the slightest trouble with it, for the reason that it was fastened by suction.

"The doctor examined the tooth (perhaps rather more minutely than prudence would have dictated,) for the purpose of ascertaining the *modus operandi* of his professional predecessor. But while prying into (what for ought we know was) the air chamber, the tooth came out, when, lo! the discovery was made that the suction lay in a large *iron* pivot, which had become nearly rusted off."

ARTICLE 5th of the Journal, is "A report on American Dental Literature," and is from the pen of Robert Arthur, D.D.S. This is a brief notice of all the works upon Dental Science or Art that have been published in this country, so far as the writer could ascertain, and are chiefly furnished from the Library of Professor C. A. Harris, of Baltimore, whose Dental library is probably more complete and extensive than that of any other member of the profession in this country.

DENTAL EDUCATION is an interesting historical sketch, from the pen of Chas. W. Ballard, M.D., D.D.S., of New York, showing the progress of Dental education in this country, from about the year 1800, up to the present time, and may be considered an interesting *resume* of the principal historical incidents connected with the advancement of Dental Science in this country. Dr. B. is an excellent writer, and should keep his pen employed.

ARTICLE 7, "Filling teeth when the lining membrane is exposed—by Chapin A. Harris, M. D." It will be perceived that the subject matter of this paper is at present engrossing the mind of our profession to a considerable extent. In the reported proceedings of the American Society at its last meeting, the reader will see that the same subject was discussed at considerable length, and also in a paper previously noticed, from the pen of Dr. Arthur. The present paper is chiefly devoted to a detail of the author's experiments in filling teeth where the lining membrane has become exposed, the results of which he sums up in the following manner:

	First year.	Second year.	Third year.	Fourth year.	Fifth year.	Total.
Number of teeth filled over exposed pulp. }	68	62	48	69	70	317
For females.	47	46	33	54	58	238
For males.	21	16	15	15	12	79
Number of cases seen after operation. }	60	51	37	47	25	220
Successful cases.	55	47	34	43	23	202
Unsuccessful cases.	5	4	3	3	2	18

Professor Harris mentions several instances of the deposition of ossific or bony matter, filling up the opening of the pulp cavity after the filling of teeth over the exposed living membrane.

Now, if this be true, (and we do not doubt it,) we are forced to the conclusion that, where circumstances will permit, it is much better practice to attempt an operation with a view of *saving* and *preserving* a healthy pulp, than to destroy it. And we cannot but think that such facts as are herein set forth, must have a tendency either to change entirely or else greatly modify the practice of many operators in such cases, and more especially so, if the views presented by Dr. Arthur be

found correct in regard to the removal of carious matter, when the removal of such matter, would expose any portion of the internal pulp. We have long found it difficult to persuade our own mind that *Nature*, who is ever so fruitful in resources, and so provident in respect to contingencies of almost all descriptions, should be wanting in recuperative energy in relation to the teeth *alone*. And we cannot but think that the doctor has succeeded in developing a love of the economy—as beautiful as it is important, covering the very ground of our apprehensions. We invite the attention of our brethren to the facts and doctrines of this article, in order that the error may be detected, or its truth confirmed.

ARTICLE 8th is a "Historical review of the progress of Dental Surgery in the United States, with reflections upon the causes that have accelerated it, and the means necessary for its further advancement." This paper is anonymous and to be continued. Its scope and tenor is somewhat similar to the article on "Dental Education," previously noticed. The author is evidently acquainted with the subject he has taken in hand, and writes with freedom and perspicuity. The biographical sketches of Woofendale, Greenwood, Hudson, Gardette, Hayden, and others, are exceedingly interesting, as showing the progress of Dental Surgery and the circumstances connected with its origin in this country.

A. H.

A PLAIN TREATISE ON DENTAL SCIENCE AND PRACTICE, by S. M. Shephard, Dental Surgeon. This little work, designed to convey popular information upon the subject of dentistry, has been several weeks upon our table. The motto on its title page commences with the following *bull* from *Dentalogia*.

"But much the teeth, for various use employed,
Disturb the system when themselves destroyed."

There is, however, much valuable information in its pages for popular reading concerning the preservation of teeth which are not "destroyed," our author taking the Parmlyan theory that cleanliness effectually prevents the destruction of the teeth. These little treatises do great good by directing the attention of the public to the importance of the dental organs and when distributed gratuitously often increase the practice of individual members of the profession. Nor do we think there is any thing unfair or objectionable in this method of getting business. Writers should, however, be careful not to advance any theory or assertion which is not sustained by facts or the observation of others. Some few years since we saw a popular treatise of this kind, which accounted

for salivary calculus, by saying that it was secreted by the teeth, an assertion, which, in our opinion is no more erroneous than the conclusion which Dr. Shephard comes to in the pamphlet before us, namely, that amalgam "*does not arrest decay.*"

Whatever "pernicious qualities" this article may have in the estimation of our author, and others, we opine that those who live in this meridian and occasionally see teeth in a perfect state of preservation, that were filled by the Crawcours as long ago as 1833, and which few dentists would ever now think of saving with gold, will be slow to believe that caries cannot be arrested by amalgam.

There are but few books, however, which do not propagate some errors, and as this one contains much that is useful and instructive, we can afford to forgive this one mistake, and many of our readers no doubt will say that a misstatement to discourage the use of amalgam, is "a fault leaning to virtues side."—*N. Y. Ed.*



COMMUNICATION FROM DR. E. PARMLY.

To the Readers of the Dental Recorder.—

In taking leave of the Recorder, and of Dr. Allen, as far as any publication of mine, I would most respectfully say to the readers of that Journal, that no other than a desire to recommend and establish the best system of dental practice has ever actuated or influenced me in what I have written. If any respectable member of the profession will say that he considers himself "insulted" or "libelled," by what I have said and will say in what the "insult" or "libel" consists, I will make the most ample apology. As far as any thing personal has been said in relation to Dr. Allen, it has always been occasioned by, and in reply to, "remarks," previously published by himself, and in no instance that I am aware of, has it been otherwise. It is true that I have made and now make the following charges against him, which I pledge myself to prove in his paper whenever he will give me the opportunity, or I will suffer the reproach which attaches to artifice and dishonor. I charge Dr. Allen with unfairness in refusing to publish replies in answer to allegations, "remarks," and misstatements,—of injustice in altering and attributing language to me, in relation to others, that I never used,—of restricting, striking out and leaving out portions of my articles, after saying that I might write of any length to suit myself,—of a want of honesty in making assertions that have no foundation in truth,—of a want of moral obligation in first informing me that my opponents have published a falsehood and condemning it in strong language, and afterwards saying in his paper, "*If it is a falsehood, it is certainly a harmless one.*"—of want of truth in saying "a letter of eight paragraphs," carefully written and "carefully examined," was a

"note hastily written to avoid all superfluous words,"—of deception and insincerity in approving the course I had taken to put a stop to the abusive and destructive use of amalgam, and of my being "always governed by the rules of courtesy," and two years after condemning that course and denouncing my language as "impudent," "insulting," and "libelous,"—of ill will in the uncalled for severity of his personal "remarks,"—untrue, uncourteous, and unprofessional. I cannot better illustrate this want of truth and justice on his part than by referring to his last article, (October number.) During the controversy, I have often spoken of the total disregard to truth in the statements of my opponents, and Dr. Allen has not yet overcome the habit. He says in his last, "If I am rightly informed, other members of the American Society that were applied to at the same time, and refused to give such letters to Dr. Parmly." Now, to all members of the American Society, who say that I received from them *refusals* either verbal or written, I give the *lie direct*, and leave Dr. Allen and them to prove the contrary. I will state one fact upon which the readers will decide. When Dr. Allen requested "articles from the other side" (anti-amalgam) for his paper, he gave me in relation to the controversy this written pledge—"I shall not dabble in it myself except so far as to preserve fair play." In *preserving* "fair play" he soon exposed himself to a suit for libel, which, upon his explanation, (of *not knowing*) I declined prosecuting, and afterwards requested him never to mention my name in his paper, and he promised he would not, but the written pledge and the verbal promise were both violated, and my language, (once admitted to be courteous) was some two years afterwards declared in his paper to be "impudent," "insulting," and libelous." With all respect and confidence, I now leave to the readers to say who it was that began "to pick a quarrel," as intimated by Dr. Allen. E. PARMLY.

November 18th, 1851.

Remarks upon the above.

It gives us pleasure to publish the above from Dr. Parmly, if for no other reasons, because it is his leave-taking—not so affectionate as it might be to be sure—but we have another reason for the pleasure, which is that it enables our readers to see all Dr. Parmly's charges clearly and concisely expressed, and, to judge of their unreasonableness after I have, as candidly and fully as I knew how, explained every misunderstanding between us. Of the rectitude of my intentions I will make no boasts, but leave those who know me to judge, and with a few remarks upon some of the "charges," I take leave of Dr. Parmly's *very courteous and gentlemanly* article.

To the first charge of "refusing to publish replies," let the twenty pages which have been published answer—the second, of "altering and attributing language," if I understand it has been fully explained by me—to the third, of "restricting," &c., I will say that Dr. P. has

in almost all cases asked me how much room I would give him and my reply has sometimes been, "suit yourself," and when the article came I have generally published it, but in a few cases have refused, on account of too great length or irrelevancy—the fourth charge of "making assertions that have no foundation in truth," remains to be proved; when proved to the satisfaction of any candid impartial mind, I will publish it—of the fifth charge, "of a want of moral obligation," in informing him of a falsehood which had been told of him, condemning it, and then saying it was a very harmless one (which sounds very bad in Dr. P's phraseology,)—see a full account in a letter and note by the editor in Vol. 2, pages 122 and 161—the sixth, of calling a page and a half of letter press manuscript, a *note* instead of a "letter," I plead guilty to, and acknowledge that it was "carefully written," not to contain any thing false or equivocal. It contained eight distinct paragraphs in reply to eight subjects in the note, (I beg pardon, the letter,) which I had just received from Dr. Parmly. Is there any thing in this incompatible with writing hastily and avoiding all superfluous words? My reply is a page-and-a-half shorter than his letter; if mine is "a long letter," what *must* his be? He also quotes from me that mine was "carefully examined," conveying the idea that I admitted to him that I carefully examined it *when I wrote it*; but this was not so. April 9th the note was written, and on May 6th I "carefully looked over" the copy of the note which I had retained, to see if it "evinced such a total want of common truth" as he had in the mean time most *courteously* written me. Oh, paragon of truth, courtesy, and *consistency*! The seventh charge of "approving the *course*" he had taken to put down the use of amalgam, I have denied, and now declare to be false in spirit and letter,—to the eighth charge of "ill will in the uncalled for severity of my personal remarks," I can only say that if any of my friends will point to any "*uncalled for severity*" in my remarks, I shall esteem it a privilege to modify it so that it may be fair and just.

So much for Dr. Parmly's charges. He denies that he was refused any letters by members of the American Society, charging dishonesty upon those dentists who say amalgam is better than gold. So it only appears that I am *not* rightly informed, and therefore I take that back until I have liberty to publish all the truth. Those who are curious will find the "libel" to which Dr. Parmly alludes, in Dr. Baker's letter, Vol. 2, page 83, of the Recorder. Although never very courageous, I can say without boasting, that when Dr. Parmly informed me that

that letter contained libelous matter, for which I might be prosecuted, I was not much frightened, nor was I any less disposed to show him "fair play" after this attempt at intimidation, (as I then considered it,) than I had been before. The manner in which I understood Dr. Parmly's request that I would not mention his name again, and the promise to that effect which was given, has already been explained in the Recorder.

During the controversy which has existed, for a long time between Dr. Parmly and myself, I have been on the defensive from first to last. It had its origin in the writings of Dr. Parmly and his clique, which I afterwards characterized as *insulting* and *libelous*. This was no new opinion, for I denounced it in similar terms when it first appeared, as I can prove by many respectable dentists in this city; but as persons more able than myself, were not wanting to take it up, there was no necessity for me to meddle in the controversy. To those friends of the right of private judgement, who have felt and expressed themselves to me as being insulted, by having their integrity impeached by Dr. Parmly, and who have sustained the course taken by the Recorder, although their letters have not been published, we now return our sincere thanks. If any of them choose to inform Dr. Parmly that they consider themselves, (or as they have said to me) the whole profession, insulted by him, it would be curious to see his "most ample apology." As for myself, I shall not shrink from expressing my convictions, whenever in my opinion the honor or interest of the profession requires it, from mere personal considerations.

NEW YORK COLLEGE OF DENTAL SURGERY.

The course of instruction laid down for the New York College is broad and comprehensive, embracing all the necessary collateral sciences. It consists of five professorships.

1st. Theory and Practice of Dental Surgery and Dental Technology, by A. Westcott, M.D., D.D.S.

2nd. Institutes of Dentistry, Dental Hygiene and comparative Dental Anatomy. (Not yet filled.)

3rd. Anatomy and Physiology, and General Principles of Surgery, by A. B. Shipman, M. D.

4th. Special Pathology and Therapeutics, by T. Spencer, M. D.

5th. Chemistry, by R. F. Stevens, M. D.

There is also to be a Demonstrator, whose duty it will be to give *practical* instructions at the operating chair, and in the laboratory.

It is intended that instruction in each of the above departments shall be thorough and practical. The college rooms are in a new building, situated in the centre of the city, and fitted up with all the necessary conveniences for the various manipulations required to be practised by the students; while the Demonstrator will be in constant attendance to aid and instruct them. With such conveniences, under the instruction of so able a Faculty, it is evident that nothing will be wanted but industry and application on the part of the students to fit them for honor and usefulness.

The tickets of admission to all the lectures, including matriculation, are \$1.00, and the price of board in Syracuse is said to be from \$1.50 to \$2.50 per week. The terms of graduation are that the students must have attended two full courses of lectures in the Institution, or one in this and one in some other Dental or Medical College, or four years, of actual practice will be accepted as an equivalent for one course of lectures.

FAIR OF THE AMERICAN INSTITUTE.

The articles exhibited this year in the dental line were much fewer than usual and presented but little attraction compared with those of former years. Most of the exhibitors have received premiums from the Institute, and as the fish is caught there is no use for further angling. The following has been handed us by one of the judges.

DR. C. C. ALLEN.—Dear Sir: The articles exhibited this year consisted of only three specimens worthy of notice. The first which was decided to be the best and excellent was of block teeth by D. H. Porter and the gold mounting of the same by Mr. Cooper, of Brooklyn, which were likewise very neat and workmanlike. A case of block teeth from Sam'l. Wardle, of Philadelphia, nearly as good as those by Porter in fact it was thought quite as good with exception of the color of the gums, which were, in the opinion of the judges, rather too dark and of a bluish tint, the mountings of these were indifferent, and apparently not fitted to the mouth. The other specimens were not worthy of notice, with, perhaps, the exception of specimens of single gum teeth from —, of New Haven; these were apparently of good material and color, but bad shape. If you can make any thing out of the above facts, they are at your service. Yours truly, F. H. CLARK.

To Dr. Porter, the Institute awarded a silver medal, and well does he deserve it, for his blocks are among the most beautiful which we have seen. To Mr. Wardle, the Diploma of the Institute was also awarded.

DR. HUNTER'S ARTICLE was received too late for this number. It will appear in our next.

NEW YORK DENTAL RECORDER.

Devoted to the Theory and Practice of
SURGICAL, MEDICAL, AND MECHANICAL DENTISTRY.

Vol. VI.

DECEMBER, 1851.

No. III.

DISCUSSIONS IN THE AMERICAN SOCIETY OF DENTAL SURGEONS.

We continue the publication of the discussions in the American Society of Dental Surgeons, as reported in the News Letter, upon the treatment of exposed pulps. We stated that there were some portions of the report where the meaning was obscure, for instance, when the President says, "we all agree that excision is decidedly the most successful method," and afterwards explains by again saying, "I did not mean to convey the idea that we, as a society, but that Dr. Dunning and myself thought so." Now we should like to know if the President of the American Society really thinks that Dr. Dunning and himself are "all." If not, what does he mean by saying "we all—Dr. Dunning and myself"? certainly not that there are no other dentists who approve of destroying nerves without the use of arsenic, as there are many who never use it except when compelled to do so by the timidity of their patients, or where the pulp cannot be reached with the probe.

We could never see the propriety of using arsenic or any other drug to slowly, and but partially, destroy the pulp of a tooth, when the patient is willing to have it done immediately with the probe. When the cavity is in a single fanged tooth, and so situated that the probe can be at once thrust to the extremity of the fang, we invariably adopt this course of practice, and in no single case in our practice has inflammation ever been the immediate result of an operation of this kind, whether performed for the purpose of filling the tooth or engrafting a crown upon the fang; but when the cavity is so situated as to be difficult of access, and the tooth has two or three fangs, the operation becomes more complicated and protracted, and as a necessary consequence, much more painful. Even in these cases, if the patient would permit, we have no doubt but the best practice would be to remove the whole of the pulp with the probe, without resort to escharotics or caustics. The first effects of these substances is to induce inflammation, which may extend through the foramin at the apex of the fang, and involve the capsulo-periosteal membrane, and this inflammation may terminate in

alveolar abscess; while if the probe be used, we have but a simple wound, which usually heals more kindly and rapidly than if produced by caustics. We have met with, comparatively, but few, however, who were willing to submit to this mode of practice, and have generally been compelled to resort to the use of arsenic, and with this we have been very successful.—*N. Y. Ed.*

Dr. J. Parmly.—Every one here will admit that there is a good and a bad way of doing things. The arsenic may be applied so as to do great good, and it may be applied so as to do great harm. I have seen cases where the nerve was in a highly inflamed state at the time, and then a pill of arsenic was put in and a piece of cotton put over it; and perhaps after a few days this would be removed and a dry piece put in and then the tooth would be filled with gold or amalgam over that cotton, leaving a mass of impurity in the cavity which would, in six months, turn the tooth to a dark color, and it was evidently dead. Who will not perceive the difference between that kind of practice and simply putting in for a few days this application of arsenic, and then removing it and all the soft part, and filling it with gold? That has been my experience and observation in the use of arsenic—that there was a good and a bad way of using it—one is decidedly bad and the other is not so objectionable. I don't think there is so much in the tooth as in the dentist. In regard to the first aphorism, I understand that in a certain state of the tooth, where the nerve is slightly exposed, it is better to treat it in that way. I do not understand that it is better to drill into every nerve and take it out, when the nerve is in a healthy state. I do not see how any one can understand it so. All I can say upon this subject comes from observation and not from practice, for I practice but very little in that way; but I have had a chance of seeing cases where Dr. Dunning has performed this operation—has taken out the nerve, and in fifteen minutes had the gold put into the fang of the tooth; and I have been more surprised to know how he got the nerve out of both fangs, than to know how a squirrel gets the meat out of both sides of the hickory nut by making a hole in but one side. You could not perceive, afterwards, the least possible disease or discoloration about the teeth or gums. I have seen many such instances; and the cases he has treated by taking out the nerve directly, have been, invariably, the most successful. I have never seen the same success in cases where he has applied the arsenic and afterwards filled the tooth. Six or seven years ago, I should have said that it was a very hazardous operation to take the nerve out and put the gold in; but from seeing it done so often, I should now say it is the most successful way, and I would have a tooth of mine treated in that way. I have a tooth in my own mouth that was treated by Dr. Foster, twelve years ago. He came very near the nerve, and I told him if he came to it to pick it out, or to take the tooth out. He came so near it that it could be, absolutely, seen. He put over it a cap, and filled it with gold. I had the filling in my tooth for over ten years. And you will recollect, Mr. Chairman, that I was very anxious

to have the tooth extracted, as I was under the impression that the nerve was dying. But I was persuaded to leave it; and I think about two years ago the filling broke out. At the time I did not feel any unpleasant sensation or taste, as I expected there would be when the cap gave way. On returning to New York, Dr. Dunning examined the tooth, and found that there was a perfect formation of the bone. He filled the tooth without touching the nerve and without giving me any pain, and I still have the tooth. The nerve was living at the time. This is all I have to state upon this subject. I rose merely for the purpose of saying that I thought the aphorisms would be generally understood.

Dr. White.—Mr. President, I would wish to say a few words in defence of arsenic, though not as used, to overcome the necessity of excising the nerve, for that I believe is the object of all. I have not the least doubt that every gentleman who has removed the pulp of a tooth at all, has had much more success by so doing, than if he had destroyed its *vitality* by any agent, and let it remain in the tooth. But it is desirable to get the nerve out with the least possible pain; therefore, the question arises, is there any thing that will take away its sensibility, but will not injure the tooth after the pulp is out. If the tooth in other respects is not injured, the next question is, can arsenic be applied in any form with safety to the future health of the tooth? I answer that I believe it can—and that conclusion is drawn from the experience of the use of arsenic for thirteen years with an earnest desire to arrive at the truth. In a series of papers by me on the subject, but which, perhaps, have not been seen by those present, there were reasons given why the pulp of the tooth should have its vitality destroyed previous to its excision; but I stated that I preferred the actual cautery, where it could be properly applied—but it could not be applied successfully in many teeth. One reason that I preferred in some cases Arsenious Acid for the destruction of the nerve, was, that it made a more deep and deadly slough than any agent I know of. By the use of it, the pulp can be taken out and produce less pain in the operation, than by the use of any other substance. If you apply enough to destroy the vitality, two-thirds of the way down to the apex of the root, you do not injure the external membranes any more at the apex than by the ordinary cautery. The only question is, does it act laterally so as to produce irritation of the external membranes. I answer that it does not. The bony structure does not take up the arsenious preparation as rapidly as the nerve does; and if it is in a proper condition to be absorbed, it will destroy the vitality of the pulp in a very short time—say in twelve hours—in twenty-four hours at the farthest—and in that time if it is not sufficient to destroy the pulp, how can it injure the bony structure. The whole object is to destroy the vitality of the pulp, and if it will destroy it in six hours, it should then be removed; but repeated experience proves that it must be left in a longer time. If a small portion has permeated the bony structure and caused periosteal inflammation, it is as likely to subside as though it had been caused by any other substance. We see cases where the gums and cheek are swollen to an enormous size, and yet it subsides, and the tooth, if plugged, will remain comfortable for years.

Another reason I gave was, that if it could be performed without pain to the patient, it did not render them timid, or prevent them from having a nerve destroyed again, as it saves him all the pain that is possible. In hundreds of cases where the operator has attempted to take the nerve out, and the patient knowing it, would never go to the office again. Many persons have said to me, "I would never go to such a dentist, because he tortured such a one so much." Now, arsenious acid is a means of preventing this pain, and there is no danger, where sufficient arsenious acid does not remain in the tooth to destroy the vitality of the periosteal membrane. The whole fault as spoken of, has resulted more from ignorance. Operators have been induced to believe that they could put in any quantity, and let it be in as long as they pleased. But it is not so. It is asserted in the United States Dispensatory that the more rapidly an arsenious paste unites with, and a sloughing of the parts produced, the less extensively is it absorbed.

It has been the habit to apply arsenic dry—what is there that you can apply that is less soluble than dry arsenic? Arsenious acid should be ground with creosote until it is impalpable, and as it is largely soluble in that substance, it is in the best possible condition to unite speedily with the pulp. If the vitality of the pulp is destroyed as far as two-thirds of the way down to the apex of the root, it can be removed better, than if the vitality had not been obtunded—and I rarely think of any other method than by applying the acid and letting it remain for twelve or twenty-four hours. It should be observed that the more porous the condition of the tooth, the less time the acid should be left in, though it will permeate the pulp of one tooth as well as of another. I do not apply arsenious acid down the root of the tooth, lest it should injure the external membrane.

The only question is, can arsenic be put in a tooth without necessarily involving its utter destruction? I say it can. On the second of July I applied arsenious paste to a cavity which opened to the pulp on the posterior part of an incisor of a boy of nine years of age. On the fourth, I filled that tooth in the root two-thirds of its depth at least, and it presents as much vital appearance now as its neighbor—and I have treated cases in that way long ago, which now present the same appearance. In '42 and '43, I prepared a thesis for the degree of Doctor of Medicine, on this subject; and I gave a list of one hundred cases which I had watched for two years, and in eighty-four of the cases, there was no pain in destroying the pulp of the tooth. I found it to vary with the temperament of the patient.

My experience is, that where the nerve has been inflamed, it will be the least likely to give pain when the paste is applied. If the operation is performed in the evening, it will be more likely to give pain, but if performed in the cool of the morning, it will not be likely to give pain in one case out of twenty, I will guarantee—but if it is in the evening, it will give pain in nine cases out of ten. A recently exposed nerve gives more pain than one that has been frequently inflamed.

I have no objection to the use of the cautery—I have no preference for arsenic, except that it is the most deadly poison I can lay my hands

on;—if you can give me something that will do it faster—I will take one share in that stock. The great object is to manipulate without giving pain, and I find that I give less pain by using the arsenious acid. As to filling the tooth as soon as the pulp is taken away, I do not do it—but I wait to see how far I have destroyed the vitality of the pulp. Nature, besides, is better calculated to excise the pulp at the point where it is most necessary, than any instrument we can apply. If we fill a tooth that has been bleeding but a few minutes, the anastomosing *blood vessels* do not at once take back all the blood that returned previously through the pulp, and that function cannot be established without engorging the blood-vessels around the root of that tooth; and it is better to wait till that condition of the blood-vessels has passed off, before filling the tooth; and then you have a better opportunity of saving the tooth, when all the foreign matter is removed, such as the fragments of dead pulp and blood clot. I have had cases where it was filled immediately, and the patient has returned the next day with so great congestion that the tooth had to be extracted at once. I contend that the necessity of waiting till the anastomosing circulation is established, is one of the most important points in the treatment of the teeth, and there is a greater degree of certainty in waiting a few days than in filling the tooth immediately.

The principal point for which I rose, was to give my evidence that I could destroy the vitality of the pulp with less pain by using arsenic than by any other means, and without endangering the health of the tooth.

Dr. Westcott.—I would like to ask a question or two of Dr. White, for information. Do I understand you to say that you are not particular about destroying the nerve to the apex of the tooth?

Dr. White.—No, I am not.

Dr. Westcott.—Did you say that it was the absorption of the arsenic that destroyed it?

Dr. White.—I have said it was the absorption.

Dr. Westcott.—If it is the absorption, and has a progression upwards, what guarantee have you that it is not carried through the apex?

Dr. White.—I have none.

Dr. Westcott.—What guarantee have you that it will stop at any given point, and if it goes through, is there not a possibility of its producing mischief?

Dr. White.—It will produce mischief if it goes through—but I never destroy the pulp entirely—I do not pass the arsenic low down in the root, for fear of its going through. I use other substances to get rid of the balance of the pulp.

Dr. Westcott.—Supposing you have destroyed the pulp two-thirds of the way to its apex, and you decide to fill the tooth, have you any special means or rule by which you stop your filling at a certain point, so as not to crowd upon the portion of nerve still remaining?

Dr. White.—When I am using a small probe to remove the pulp, I pass it as low down as I can—it being large enough to be handled—I

cannot get quite to the apex, except in one or two classes of the teeth—and I think, that getting to the apex is rather more of a beau ideal of what treatment ought to be. I never traveled to the apex, without it is a very large root. I said two-thirds, because I know I never can get to the apex of the root—it is as fine as a hair for a third of its length.

Dr. Westcott.—The point is, what means have you of knowing whether the arsenic has not been carried clear through to the apex, and there made it liable to inflammation?

Dr. White.—I would answer that I have none, except the inflamed state of the root of the tooth, and I think if it does, the part can as well recover from that corrosive agent as from any other. But I do not mean to say that inflammation invariably ensues—I deny that it is always carried through, and the only symptoms I have that it is not, is that it don't cause inflammation afterwards. I would state that I was enabled to follow those one hundred cases for two years, in which time I extracted six of the teeth for alveolar abscess—but a great number I am enabled to watch yet, and there has not been any alveolar abscess.

Dr. Arthur.—I also have been very much interested in this matter, for a good many years past. I have always used arsenic in some form for destroying the vitality of the pulp before removing it, and still use it with satisfactory results. On first entering the profession, I applied it as well as I knew how, but with such bad consequences that I ceased to make use of it. I am indebted to Dr. White, for hints which induced me again to turn my attention to its use, and for seven or eight years past have employed it with great satisfaction. My principal object in rising at this time, is to call the attention of the association to a new agent for destroying the vitality of the pulp, or rather an old agent in a new form. For about a year, at the suggestion of a gentleman from Cincinnati, who then stated that it had been used in the west a long time for this purpose, I have been using the ore of cobalt. This, it is well known, contains about fifty per cent of pure arsenious acid, which indeed, is principally procured from this ore. I prefer the arsenic as it exists in cobalt, for the purpose of destroying the vitality of the pulp, for the simple reason that its effects in my hands have been more satisfactory. I use the simple pulverized ore, by saturating a small piece of cotton with creosote, and taking upon it about the twentieth part of a grain. I never apply it except I am satisfied that the pulp is fully exposed. I generally make two applications, which, in most cases, I find quite sufficient for the purpose. If I am satisfied that the case coming into my hand, requires the extirpation of the pulp, I apply the cobalt without subjecting the patient to the pain of removing the decayed bone from the cavity. I cover it with cotton saturated in an alcoholic solution of gum sandrach, which, with very light pressure—a very important matter—can be made to retain its place. This I allow to remain twenty-four hours. On removing it, I am able very fully to expose the pulp. I then apply the cobalt direct'y to the surface of the pulp, secure it as above directed, and allow it to remain at least a week. At the end of this time it will generally be feasible to remove the pulp to the very extremity of the root, with but slight pain to the patient. Before adopting

this practice, to which I was a long time coming, under the influence of the great dread of the effects of arsenic upon the peridental membrane with which I was infected, I had a great deal of trouble in these cases where patients would not bear firmly the pain attending the removal of the remains of the pulp from the fang. I found it easy enough to destroy the vitality of the pulp to the opening of the fang, and a little way up, but then in consequence of the difficulty of bringing any thing into direct contact with the remaining sensitive part, I was generally compelled to remove it without regard to the pain inflicted, which was sometimes exceedingly severe. I was generally in the habit of making several applications of the arsenic, before I used cobalt in this way, and as Dr. Maynard's practice has been alluded to in this connection, I may state that I know that this was also, and I think is now his practice. I have never allowed arsenic to remain so long as the cobalt, and am therefore unable to say whether it could be done with safety. I should hesitate to try it on account of its solubility.

Dr. Westcott has just stated that in any case where arsenic is applied to the sensitive surface of a cavity of decay, it is certain to destroy the vitality of the tooth. This remark has a particular bearing upon a paper published by me in a late number of the "American Journal of Dental Science," in which I contend and endeavor to show that this can be done, with advantage. We all know, and I know well, that arsenic applied to the bone of a tooth, even when but slightly decayed, and allowed to remain long enough, will effect the destruction of the pulp; but that it will do so in all cases, when allowed to remain only long enough to remove that great tenderness of the bone, which is often found so serious an obstacle to good operations, is not the fact—I know that it is not so.

Dr. Westcott.—I will be more explicit on the point—I meant that so far as I have had a chance of observing, these teeth which have been treated with arsenic in the usual way, with the view of destroying the sensibility of the bony structure, I have usually found worked bad.

Dr. Arthur.—May I ask what is meant by the usual way?

Dr. Westcott.—Allowing it to remain twelve, or twenty-four hours, four days, or a week, as has been stated in this discussion.

Dr. Arthur.—No allusion, as far as I am aware, has been made in this discussion, to the use of arsenic for removing the sensibility of the dentine, but for the entire destruction of the vitality of the pulp, which is quite another matter.

Dr. Westcott.—I incidentally stated that in my general experience, I had seen much mischief from the use of arsenic—as it had killed the teeth of several—destroying their sensibility.

Dr. Arthur.—The same sweeping assertion, that arsenic could not in any case be applied for this purpose, without eventually destroying the vitality of the tooth so treated, has been frequently made, and I think it ought to be met with a hearty denial of its truth.

There is another important point to be considered in connection with this matter of destroying the nerve, and that is the inflammation of the investing membrane of the root, which is very liable to occur, in the

course of the operation, whether arsenic is used to destroy the sensibility of the pulp or not. The best means of treating this inflammation, when it presents itself, is a subject of very great importance, as the successful preservation of many teeth depends upon it. It is impossible here to enter fully upon this subject, and I now allude to it merely to call attention to the topical use of chloroform for the purpose. I have found its effects more satisfactory in many cases than any agent known to me. Whether it acts as a sedative or counter-irritant, I am unable to say. I generally apply it, or direct its application by wetting the finger with chloroform, and touching the gum repeatedly along the course of the root or roots of the tooth under treatment, or saturating a small piece of cotton with it, and laying it against the affected part. Since using chloroform for this purpose, I find that it has been used in France as a topical application in cases of neuralgia with alleged success. About two months ago, a gentleman called upon me to ascertain if I could do any thing to relieve him of pain which he had been suffering for several weeks, with one of his lower molar teeth. He supposed the nerve would have to be destroyed. On examination I found that the nerve was already dead, and that he was suffering from inflammation of the peridental membrane. I advised the application of chloric ether. He called in a few days to say that in five minutes after he applied it, he was relieved of pain, and had since been quite free from it. I then removed the remains of the pulp, filled the roots firmly, and the cavity in the crown, a day or two afterwards. Some weeks after this I saw him again, and there had been no recurrence of the painful symptoms.

Dr. Bridges.—I would remark that this subject was introduced by me, with no unkindness whatever to Dr. Westcott.

A remark has been made which reminds me of a course of practice pursued by a friend of mine. He has endeavored to preserve the nerve alive by cutting it off above the wounded part, taking out the wounded part, and after medical treatment filling the tooth. He told me that in the last two or three years he had taken out fillings to see the state of the teeth, and that in several cases a deposit of white foam had been found in the nerve cavity, and a beautiful healthy state of the nerve had taken place. If this is a fact, it is worthy of notice; and I believe that if one half of the attention was paid to keeping the nerve alive that is paid to killing it, there would be found some remedy that would save almost every nerve. I recollect when I was a boy, in going across the mountains of Vermont, the horses ran away, and a boy had his leg mashed to pieces; a young doctor was sent for, and he said send to my father's for the instruments, and have his leg cut off, but an old doctor in the neighborhood, whom the young one called an old *granny*, said, let us try to plaster it up; this was done, and in three or four weeks the boy had a better leg than a wooden one, and afterwards had a good leg. And I propose now that we try to save instead of trying to kill. The nerves are all very much alike, and if you wound a nerve in almost any other place it may be brought back to a healthy condition. Why cannot a nerve in the tooth be made alive again?

What I told that Dr. Westcott said was literally true. I took it at the time very unkindly, because I thought he meant me; for I used to kill the nerve and fill the tooth over it but it was a species of quackery.

Dr. Robertson.—The general run of discussion seems to have been on the second aphorism. And it seems to indicate that there is no other treatment except the destruction of the exposed nerve. In my own practice for the last two years, in a great many cases where the nerve was not inflamed, but where I had exposed it in preparing the tooth for filling, I have used a small quantity of collodion, which makes a smooth coat over the exposed nerve. I have practiced it for two years with scarcely a failure that I know of. It seems to me that these aphorisms should be worded somewhat in accordance with the suggestion of Dr. Westcott.

President.—I would explain that we have now under consideration the best mode by which a nerve, when it becomes necessary, may be destroyed. We may take up the best mode of preserving it afterwards.

Dr. Robertson.—That is why I object to it, because it would seem to imply that that is the only mode of treatment.

On motion, adjourned.

TO BE CONTINUED.

A NEW METHOD OF CONSTRUCTING ARTIFICIAL GUMS.

There is much in the following article, which will be found interesting and instructive to all our readers; but, as it contains some strictures of a personal nature, we do not feel at liberty to publish it without giving Dr. Allen an opportunity to reply to it, if he wishes, in a following number.—*Ed. Rec.*

To Dr. C. C. Allen, Editor N. Y. Dental Recorder:

According to promise I now send you the recipes that I authorized you to announce in the last number of the Recorder, not, however, pretending that they will accomplish the great ends that I have arrived at in my improvement, which consists of a *body*, (not an enamel) that does not materially contract in the fire.

That by repeated firings any one may be enabled to unite the ordinary tooth to a plate, I suppose no one doubts that has paid any attention to the matter. The French have done so for many years, Delabarre having described the operation more than fifteen years ago, and the enameller's art of the present day teaching by practical demonstrations, that mineral substances can be made to assimilate so closely to the surface of various metals, as to leave no room for doubt that a tendency to cohesion exists between many formulas of enamels and different

metals. That the union is sufficient for a dental apparatus, I dispute, and for the following reasons.

In the first place, all enamels are of a brittle nature, so much so that I will agree to break the teeth from any plate to which they may be united with *enamel alone*,* simply by the aid of my fingers, if any respectable dentist will say that the article is not too thick and clumsy for the mouth. In the second place, *platina only* can be used as a base with certainty—other metals being liable to warp—and this metal being of a soft nature, no great strength can be looked for in it; leaving it entirely to the strength of the *material* to resist the powerful action of the organs of mastication which sometimes overcomes even stout work on gold bases. And again, a fracture once occurring what are the means of repair that will *prevent* a recurrence of the evil?

Every Dentist knows that the continued occlusion of the jaws is a severer test than a greater amount of force would be applied at any one time out of the mouth.

However, to those desirous of trying the experiment, I give the following formulas, which will make a stronger piece of work than any other *enamel* (I do not say Silicious Cement,) that I know of, at the same time being tolerably well informed upon the subject.

Take Silex, 2 oz.; Glass of Borax, 1 oz.; *Pure* Caustic Potash, $\frac{1}{4}$ oz.;—have your silex and glass of borax ground very fine, put your potash in a wedgewood mortar, grind fine, then add the others and mix thoroughly. Cut down a medium sized Hessian crucible until it will go in the muffle of the largest sized dentists furnace—line the crucible with a paste of very fine Silex and Kaolin—dry it, then force in the mass and bring up the heat upon it until it is fused into a glass, after which, withdraw, break the crucible, and remove the foreign particles, and pulverize, when it is ready to be ground with its own weight of Spar and fired as before, withdrawing when it is perfectly fused, not waiting for it to run. It will come from the crucible in a solid cake, which pulverize, but not too finely, and it is then ready for use, after the same manner of manipulation laid down in the Sept. number of the Recorder, or any other that genius may dictate, and if properly prepared will require but one heat for each side of the teeth.

An elegant gum color can be made by first grinding three grains of *Chilton's* purple powder of Cassius, very fine in a mortar, and adding

* Why not back the teeth by the aid of the lower platina pin and apply your solder previous to putting on the internal coating, allowing the heat that fuses the cement to also flow the solder?

1 oz. Feldspar in a coarse state, and grinding to an impalpable powder, which form into a ball and fuse on a slide in a muffle.

Also fuse together in a crucible, 1 oz. Silix; $\frac{1}{2}$ oz. Glass of Borax, which, after removing extraneous matter, is to be ground in equal proportions with the colored spar, first grinding one grain of English rose in a mortar for each pennyweight of the mass that is to be added. When ground fine, fuse in a crucible, stopping when complete fusion takes place, grind and it is ready for use. Lighter shades may be given by making the same materials void of coloring matter, and add in any proportion thought proper.

If it is not desired to take the trouble to manufacture the material for the base, it can be avoided by breaking the *English pot*, in the manner I spoke of in my last, and fusing the product with an equal part of spar, as here laid down. The gum enamel, however, must be made as just stated.

I have now given what I *know* to be a better article than the one Dr. Allen thinks I *conceive* to be his, and hope he may profit by it, as well as the persons to whom he has sold the *right* to use *his* article, and to whose decision I leave it, whether I have not lit up the *visible darkness* he speaks of.

The *modus operandi* as published by me in the September number is all that is needed to accomplish what Dr. Allen has claimed, his assertion to the contrary notwithstanding;—he may use another article than sand with the plaster, (nothing else is needed however with careful handling) but if any one desires to have a tougher article, that object may be attained by using Asbestos with the plaster, or better qualities are exhibited by uniting equal parts of plaster, asbestos, and quartz sand. But I will not assert that this material neither “contracts, expands, or cracks when subjected to a white heat,” but this much I promise, it will sustain the teeth in their proper position in the fire, *which it would not do if it were not affected by the well known laws of heat*. And since the *learned gentleman* asserts there is no other article now in use that possesses the requisite properties except that in use by himself, I will give him another formula that will sustain teeth in their proper position at three times the heat he uses, even allowing him 2000 degrees.

Take Silix, 1 oz.; Kaolin, 7 dwt.; grind very fine, add 1 oz. Silix, about as coarse as canister powder, which test, and it will be found that it has not visibly contracted.

In answer to the doctor’s insinuation that there are those who are

ever ready to set up their presumptive claims without even a line on record to show that they were ever entitled to them, I would simply state that I do not claim the *improvement* (?) that consists in sticking teeth to the plate, as has been done before he ever thought of Dentistry, but I claim to have perfected a system by which every dentist may be enabled to do his own *block work*, without the necessity of learning to carve, (which art, experience may have taught him every one cannot acquire,) or even without manufacturing his own teeth, and at the same time have the power of mounting them after whatever fashion may please him best.

It is true I did not make a public announcement in the early stages of my experiments, thinking it time enough when perfected. It has not been the work of accident, but a properly pursued system of experiments, until perfection has been attained and *tested*, and is very different from the article bought by Dr. Allen from Mr. Steemer.

One hundred and thirty dollars is considerable to pay for an enamelers recipe, when it can be had by borrowing Ure's dictionary.

Dr. Darling also bought his knowledge from the same gentleman, and was threatened with prosecution by the *astute* doctor, it being his *own* particular thunder; but not being easily frightened, it is stated that a partnership ensued, the article to be sold as Allen's invention, he having made all the fuss and been to the expense of advertising; "for," says he, "what would the American Association think, after all that I have said, if they were to find that it is the work of a dunder headed Dutchman," or words to that effect.

Here is my specification, that was written and even recorded at the Crystal Palace, prior to Allens acquaintance with Mr. Steemer, viz: "Artificial Teeth on a new and improved plan by Wm. M. Hunter, Dentist, Cincinnati, Ohio. The teeth are first arranged on the plates according to the knowledge of the manipulator and taste of the patient, after which, the gum is applied, which does not shrink in the fire, and the whole brought up to the proper degree of heat in a muffle, and suffered to cool, when they will be ready for soldering to the plates, without having changed by warping or otherwise, in the fire, thereby enabling any dentist who can set single teeth well, to make *block work* with a greater degree of certainty, and much more accuracy, than by carving, and without acquiring that art."

I refer to Mr. McCurdy, of the firm of Jones, White & Co., for the truth of the above. It is true that through the neglect of my agents, the specimens I most depended upon were stolen or mislaid, and the

one on exhibition defaced, but that does not alter the facts, and I question if it has the result, as not one of the world's dentists, as far as I have been able to learn, has even received an honorable mention at the *Fair*.

To the following gentlemen I announced the principles of my improvement, and that I had put it in the mouth more than fifteen months ago. Drs. W. H. Elliott, Jahial Parmly, C. C. Allen, C. O. Cone, J. D. White, Robert Arthur, Dan'l. Neall, Jr., C. C. Williams, and many others.

Drs. Crane and Leslie, Dentists, of Cincinnati, have testified to having seen the work in various stages of improvement, and at different times, since 1846, and to the fact of having seen my specimens before they started for the London Fair.

Dr. John Locke, Professor of Chemistry and Pharmacy, Ohio Medical College, has testified that my work is what I represent it, from the fact of having experienced its benefits, and had the opportunity of witnessing operations in my laboratory, also as to the length of time he has known me to have been *progressing* in it.

The testimony of Drs. Taliaferro, Warder, and Buckner, medical gentlemen of high standing, is "on record," both as regards the principles and the results.

I make this statement to show that I have covered the whole ground claimed by Dr. Allen, and much more, and to convince him that it was not through "private pique or sinister motives," but through a simple sense of justice that Dr. Leslie made the *expose* before the Mississippi Valley Association of Dental Surgeons, which thwarted him in getting a gold medal, even though he did *offer privately to pay for it himself*.

I now give a few *facts*, since the *veracious* doctor expresses a preference for them, as to the estimation in which at one time he held Mr. Steemer's "stuff," as he now calls it. That he purchased it of him, and that Steemer worked in his laboratory, he has acknowledged, and it was after that purchase, that Allen declared to Mr. Toland, (from whom he was buying teeth,) that he never had an article of enamel to suit him until that time; and previously to his going before the American Association, he prepared a paper to be presented to Mr. Steemer for his signature, declaring that he (Steemer) had "received of J. Allen, one hundred dollars, in full for services rendered to said Allen, in his laboratory," and pledging himself not to develop the principles to any other person whatsoever, which paper Steemer refused to sign. This paper *bears date, June 20, 1851, in Allen's own hand writing*.

A Mr. Thomin was solicited by Allen to obtain Steemer's signature to this paper, Allen not having a knowledge of the German, and Thomin was offered a handsome gratuity if he succeeded.

Is it because of the partnership that Darling too assails Steemer? Does he not recollect giving Steemer a certificate, recommending his article to the profession previous to his partnership with Allen?

That Allen may have changed his method somewhat since his troubles, is not improbable nor impossible, as the varieties of enamel that will accomplish what he claims, are almost innumerable, and the mode of application and mechanical appliances just what you please.

As to the caveat, that Dr. Allen lays so much stress upon, dates will prove that it was not entered until after I had exhibited specimens, and Allen had heard of them, and had them described to him, and Darling had seen them and declared that it was the best work he had ever seen in his life time.

A caveat, *in the patent laws of the United States*, is a description of some invention designed to be patented, lodged in the office before the patent right is taken out. *It operates as a bar to applications, respecting the same invention from any other quarter.*

I leave the profession to draw their own inferences.

Cincinnati, Nov. 17th, 1851.

WM. M. HUNTER.

ON THE NECESSITY AND ADVANTAGES OF POPULAR INSTRUCTION IN REGARD TO THE TEETH.

BY A. HILL, D. D. S.

Every member of the Dental profession who has been in practice a few years, must have been conscious again and again, of laboring under many disadvantages, arising from the ignorance of his patients in regard to their own teeth. And questions, of which the following are moderate specimens, are often propounded to him.

"Doctor, don't you think it injures the teeth to brush them so much?" (the "*so much*," having reference perhaps to two or three times a week.) "Do you *really* think that *filling* teeth, is of any use?" "Don't you think it hurts teeth to file them?" &c., &c. Highly complimentary as such questions are, to the moral honesty of those who live by doing just these things, and who are in the constant habit of recommending the *filing*, *filling*, and *cleaning* of teeth; yet they must encounter them, almost daily in their professional intercourse with their patients. Now it is clear, that no well informed individual could propound such ques-

tions as these to a Dental practitioner, without *intending* an insult. And all such interrogatories, are only to be tolerated on the ground of their ignorance. Ignorance, of course, in *this particular* only. Here there is evidence of the most stolid ignorance of the matter in question. Evidence palpable to the sensibilities of every practitioner of our art. And if my professional reader has not often felt the mingled flush of shame and mortification tingling his cheeks from causes such as we have alluded to, we can only say that he has been much more fortunate than the writer of this article. But these are not by any means the *only* evidences we have to adduce in proof of gross popular ignorance upon this subject. Indeed, these are of trifling moment, in comparison with those that meet us, in almost every *smile* with which we are greeted, responsive to our own. How few, whose lips are thus parted, disclose not in the appearance of their teeth, the sad effects of ignorance or neglect, (the latter generally arising from the former,) in the partial or complete destruction of those beautiful organs, whose office is to subserve the most important functions of body and mind. And however much the skill of the Dentist may contribute to remedy the loss occasioned by such ignorance, there is nevertheless much to be deplored, which the combined wisdom of man can never obviate or overcome. How many cases of absolute deformity resulting from the premature removal, or *non*-removal of the temporary teeth of children at the proper period, might be prevented, if parents understood a few simple principles connected with this department of knowledge.

How many cases of irregularity in the teeth, not indeed so great as to amount to absolute deformity of the face, yet sufficient to induce bad habits of speaking, and an unpleasant play of the features, might be avoided altogether, by the same means. But farther than this—if the mother could feel assured that the simple washing of the gums of her infant child with a soft linen cloth, dipped in *pure* water, *every day*, would not only prevent that common disease of infancy, termed "*children's sore mouth*," but materially assist the healthful development of the *deciduous* teeth, a vast amount of suffering might be prevented, which is now endured, and parental solicitude and anxiety greatly relieved.

Nor is this all. The more alarming indications which often accompany that critical stage of human existence, *the first dentition*, would suffice the watchful parent, to summon to her aid those means, which, when properly attended to, would change the alarming aspect of almost every case, and annul those fatal symptoms at once.

But, for the want of such information, thousands are perishing around

us. Again, if parents could be made to understand that the *thorough* and *habitual use* of the tooth brush, and *pure water alone* is sufficient to preserve *entire* the temporary teeth of children, until nature displaces them with a new and more permanent set, we would not be confronted as we now are, with such sorrowful looking mouths. But, instead of denuded teeth, and swollen and inflamed gums, a beautiful string of brilliant pearls would gladden every smile of infancy and youth with which we are greeted.

The premature and rapid decay of the human teeth, as presented in the children and youth of this country at the present time, must be regarded as a fact of great importance. And it would seem that the causes, whatever they may be, producing this state of things, seriously challenge the attention, not merely of the dental and medical professions, but of parents, who can but be interested in the well-being of their offspring. Now, it seems obvious, that either *nature* herself is greatly at fault, or else there is a want of care, or information in regard to this matter, amounting to, or nearly approaching criminality. We might as well suppose that nature would refuse to fulfill the necessary conditions upon which the other parts of the osseous structure of the human system depends for its completion and development, as that she should be found so faulty or negligent, in regard to the teeth *alone*. And if hers be not the fault, then we must turn our attention elsewhere for its discovery.

Constitutional causes, beyond question, give to the teeth of different individuals, their distinct and peculiar characteristics as related to temperament or diathesis, and in a great degree govern their structure as to *solidity, form, and color*, and thus render them less, or more liable to destruction from external causes, in proportion as their constitutional formation is frail or otherwise. Yet experience demonstrates that even very delicate teeth—teeth of the most fragile structure, may be preserved for an indefinite period by due attention to cleanliness alone, and where the care and attention bestowed upon them is proportionate to the necessity of the case, such care cannot fail to be rewarded in the preservation of those very delicate, yet exceedingly useful appendages. Whatever the agent or agents of *caries* of the teeth may be, it is admitted on all hands to be *external* to the tooth, and capable of being either removed or neutralized, and whatever may be said in favor of dentifrices and gum-washes of various kinds, it is absolutely certain that *pure water* is sufficient of itself, in a great majority of cases, to remove the offending substance or prevent its destructive action. These facts

therefore, being admitted, it will not be necessary to protract the discussion, as to the cause of dental *caries*, nor yet to argue the advantage of popular information to any considerable length, as such advantages are obvious to every reflecting mind.

But the means of communicating such instruction, is a question demanding at least a passing notice. The circulation of brief popular treatises upon these subjects, by different members of the profession in their several localities, is *one* mode by means of which some have sought to obviate the difficulties above referred to. Yet the *chief* design we apprehend in such cases has been to *advertise* themselves as dentists, rather than to impart substantial information calculated to dissipate popular error in regard to the teeth.

Some few periodicals have maintained an ephemeral existence, which were calculated to do much good, if the circumstances under which they were published could have ensured their continuance. But the expenses of such publications, aside from the advantages of advertising, were too great to admit of their continuance. This mode then, appears insufficient to accomplish the object. We therefore submit, that something *more* is necessary, in order to direct public attention to this important matter.

It is doubtless well known, that until quite recently, Physiology, as a distinct branch of Science, has been almost *exclusively* confined to our Medical Colleges, and highest literary institutions. And that it has been deemed quite improper to teach it in a *popular* form. But, thanks to the enlightened spirit of the age, this feeling is fast giving way before the indomitable and persevering energy of those who have been highly successful in bringing this science, in a popular form, before the public, not only in books and periodicals, but by able and interesting lectures. And these lectures have been listened to, by thousands of our citizens, with the highest satisfaction, and the consequence is a demand for it in our seminaries, academies, and even public schools. And we certainly anticipate the time, and that not far distant, when popular instruction in Physiology will be considered *indispensable* in all our educational institutions.

But as yet this instruction has been *too general* to cover the ground under consideration. We need, therefore, a *special* department in this branch of Physiology, which *our own* profession are competent to supply.

And why may we not have these lectures? Are they not essential to the welfare of the present and future generations? Are they not in-

timately allied to the objects sought in all our female seminaries and schools of popular education?

Those graceful accomplishments, sought under the immediate auspices of a teacher of dancing, upon which thousands of dollars are yearly expended, are certainly less important than those circumstances which go to secure beauty of *face, feature, and expression*, and without which those are often lost forever.

We humbly conceive that the time has now arrived, when members of the profession should take hold of this subject, and popularize it, to meet the exigency of the times, and the pressing wants of the community. Nothing could more successfully tend to dissipate the darkness and superstition that now envelope the public mind in reference to many important Physiological truths, than the course here suggested. Nothing would more effectually tend to elevate the standard of professional character, or indicate more truly the line of distinction between the really meritorious and the unworthy professors of our art.

Nothing would so effectually expose the empirical pretensions of nostrum venders, and vile, yea villainous, quack advertisements with which our news papers are constantly teeming, as to throw open the door for correct information upon this subject. Let it be carried into our female seminaries and common schools. And when the value of the teeth are once appreciated by the public as they should be, and their intimate relation to the *health, comfort, and convenience* of every human being, explained and enforced as they should be, then our professional services will be more highly esteemed, as a natural and necessary consequence, and those disgusting "*tricks of the trade*," by which the prejudices of the public are kindled against the profession, will be exposed, and the merited chastisement meted out to such as most evidently deserve it.

Popular lectures on Physiological subjects to which we have occasionally listened, do not meet the wants of the community in this regard. And however valuable they may be in other respects, this speciality has not received that attention that the subject merits from those by whom such lectures have been delivered. Indeed, they have scarcely touched upon this great theme at all. And yet the amount of human suffering, to say nothing of the inconvenience and discomfort arising from irregularities, and the premature loss of the teeth can scarcely be estimated.

Perhaps we have said enough to answer the design of this paper, viz. To direct the attention of our professional brethren to this subject, but

the theme is a fruitful one, and we shall conclude this article with a crowd of thoughts pressing upon our mind. If it should serve to promote, or otherwise move the pen of some more competent writer, our ambition will be perfectly satisfied, and we trust the effort will not have been in vain.

STONE CEMENT.

As there seems to be considerable attention at present excited in regard to this matter, we have concluded to give the results of our own experience in the use of "*Stone Cements*."

In the multiplicity of experiments which we have tried, and the various substances which we have used, with the hope of finding some combination of matter that would answer the purposes of a useful stopping for carious teeth, we have not omitted the use of *sulphur*, by way of experiment. And at *one* time we were quite sanguine of success—but alas!

"The best laid schemes of mice and men"—

frequently disappoint their projectors. And thus it was with us, in our experiments with sulphur as the base of a plastic filling for teeth. We succeeded in making a very beautiful article, and were enabled to apply it in a manner that the patient could not detect the substance by any fumes of the sulphur emitted in its preparation or use. But we soon found (what others who use sulphur in this way will find,) that *it will not stand* the action of the fluids of the mouth.

When first applied, it seems to be just *the* thing, and the action of the burnisher leaves a smooth polished surface, resembling the enamel of a tooth. Yet after a short time, the sulphur, which is the combining substance, decomposes, and leaves a rough gritty surface, somewhat resembling *pumice stone*, which gradually wears away, and washes from the cavity.

In one instance, in which we used it for stopping a large cavity in a right superior bicuspid tooth, the effect was very similar to what we have witnessed where *amalgams* have been used in like cases, viz: changing the color of a tooth to a dark green, nearly to its apex. This tooth we were compelled to remove, and thus terminated our experiments with sulphur fillings. Previous to this, however, we had filled a number of cavities, some of which fillings remained for several months, gradually decomposing, and washing away. And we cannot call to mind a single instance, in which the effects above described have not

been observeable, *i. e.* the decomposition of the sulphur in the mouth.

The mode of its preparation is very easy and simple—it may be done in the following manner:—

Take a large iron spoon, and melt some sulphur in it over a spirit lamp—when melted, stir into it either powdered *Feldspar*, *quartz*, *bone-ashes*, *marble-dust*, *gypsum*, or any other substance you please, until of the consistence of mortar, then heat it to about 350° Far., and suddenly immerse in cold water. It is then plastic, and may be applied to the cavity with perfect ease. While retained in the water its plasticity will continue for some time, and may be moulded between the fingers without difficulty. Sulphur is completely fluid at a temperature of 220°. At temperature of 428° it is red and viscid, and, when immersed in water, becomes soft and plastic.

A preparation of sulphur and chlorine may be mixed with any of the above named articles, and used for filling teeth, so far as its plasticity and subsequent hardening are concerned. This, I believe, forms what is called “milk, or cream of sulphur.” Sulphur combines so easily and with so many different substances, that it cannot be depended upon as a permanent stopping for the teeth, and upon the masticating surfaces, it soon becomes *gritty*, and unpleasant. We have seen several advertisements, setting forth the advantages of some remarkable “*Stone Cement*” for filling teeth, which we suppose, if tested by fire, would soon indicate a sulphurous composition. We therefore furnish the above for any who may be desirous of experimenting in this manner. A. H.

THE MEDICAL SCHOOLS.

New York now boasts of three Schools for educating young men in the science of medicine, and the lectures in all of them are now going on. The number of students at present in the city is less than usual, though well represented in all the schools.

In the New York Medical College, Professor Barker gave the opening lecture before a large audience of ladies and gentlemen. The subject was the Intellectual qualifications requisite for success in the practice of Medicine, which was so happily treated by the Professor, as to elicit the frequent applause of the audience.

During the preliminary course of lectures, the following subjects were discussed:—

The Pathology and Diagnosis of Diseases of Females, by B. F. Barker, M. D.

Toxicological Chemistry, by R. O. Doremus, M. D.

Dental Pathology and Dental Surgery, by C. C. Allen, M. D.

Owing to the illness of Professor Cornochan, the hours which were to have been filled by him upon the Surgical operations of the Eye, were occupied by the other Professors upon various subjects.

In order to impart to the students any thing like correct views of the Pathology and surgery of the Teeth, we found it necessary to commence with the Anatomy and Physiology. Our course consisted of eight lectures upon the following subjects. First. The Anatomy of the teeth and jaws. Second. The Structure and Development of the teeth. Third. The eruption of the first set and their exchange for the second. Fourth. Irregularities and the Treatment proper to prevent them. Fifth. Hygiene and Accidental Diseases of the teeth. Sixth. Caries, and Extraction. Seventh. Odontitis. Eighth. Diseases of the Gums and Alveolar Abscess.

We were pleased to see that the class manifested a very commendable interest in the diseases of the teeth, and their connection with those of the general system, a subject which has not heretofore elicited that attention from medical schools which it most justly merits, and which it is yet destined to receive.

Since the delivery of these lectures, we have been applied to for practical instruction in operative dentistry, by medical students from this and other schools in the city, and we have no doubt but what either school which would establish a chair of Dental Surgery, and provide room for a suitable *dental laboratory* would receive a great acquisition to the number of its students, especially from the southern states, as we are informed that most of those students desire to qualify themselves to perform operations upon the teeth.

EFFECTS OF AMALGAM.

The following is a sample of the very many opinions which have been expressed to us, both written and verbal, during the past controversy in the Recorder. Among the hundreds of dentists with whom we have conversed upon the subject of amalgam during the past fifteen years, since we first become acquainted with its composition and use for dental purposes, we have not met with more than *six* who even pretended that they had ever witnessed any mercurial effects upon the system from amalgam fillings in the teeth, and we think it more probable that all these six were mistaken than that the others would not have seen

a single case, if it is capable of producing this effect. A highly skillful Homœopathic physician of this city, who devotes his practice mostly to obscure and chronic cases, and is somewhat remarkable for his critical examinations and close observation of all the symptoms of disease which he is called upon to treat, lately informed us that, though he considered it possible that the system might be affected by amalgam fillings, and would not consent to have it put in his own or his childrens teeth, still he had not yet met with such a case, though he had often found amalgam in the mouths of his patients.

There are many dentists who are deterred from using amalgam in their practice from the same views and feelings expressed by our correspondent, viz: On account of the prejudices which exist against it, and which, in our opinion, have been caused mainly by unfair and false statements in reference to its effects upon the teeth, the gums, and the general system; but this prejudice, in spite of what we think an ill judged opposition to the judicious use of amalgam, and in spite, also, of the very injudicious and ill judged use which quacks have made of it, is fast being dispelled, and there are now many patients of the highest respectability and intelligence, who have witnessed its good effects in the teeth of their friends, and who will have it in their own, in those cases where their dentists have been unsuccessful with gold.

We have been slow in forming our opinions of amalgam as a substance for filling teeth, but have been convinced, more by the bad operations and unskillful use of it, (because it has been mainly in the hands of unskillful operators) than by its judicious and artistical employment, that its preservative qualities, when placed in a carious tooth, all other things being equal, are equal to gold, but we do not, therefore, recommend it as a substitute, except in those cases when gold cannot be successfully used.—*N. Y. Ed.*

Albany, Nov. 17th, 1851.

DR. C. C. ALLEN.—Dear Sir: Now sir, as you and Mr. Parmly have had quite a long controversy on amalgam of mercury and silver, I would take this occasion to give a little of my experience in an extreme case. My wife cannot take mercury in any form, or in the smallest quantity, without being thrown into spasms by it. Some ten years ago I filled a large molar tooth for her with amalgam of mercury and silver, the tooth was but a shell,—it lasted until about two years ago, when it broke away, leaving the roots with a large portion of the plug remaining in them. So it has remained ever since. She has never been able to detect any bad result from it, nor have I ever been able to discover any

foeted breath or any mercurial action about the mouth or gums. But this is only one case out of many scores, that have come under my observation, many which could not have been filled with gold, have been made useful and retained in the mouth for ten and fifteen years; but, owing to a prejudice which exists among a portion of the community, I do not use it, except where I am requested to by persons who have worn it in their mouths for many years, and in such cases where nothing else can be used to advantage. I never saw a case where a patient had tried it that they were dissatisfied, but, on the contrary, it is principally such persons that I use it for. Some have had the plugs in their teeth for fifteen years, and the teeth very badly decayed at the time they were filled. I can candidly say, in all the cases I ever saw, (and I have seen hundreds of them,) I never yet saw any evil result. Yours truly,

A. C.

ENAMELED PLATES AND ARTIFICIAL GUMS.

Our readers will see by the advertisement of S. A. Main, that there is another competitor in the field in the same line of artificial gums as Drs. Hunter and Allen of Cincinnati. Mr. Maine claims that he has succeeded with work of this kind several years since, and that there is a piece now worn by an individual in this state, which was then constructed by him. Specimens of his composition for the purpose of fusing together single gum teeth so as to form but one block for an entire piece may be seen at his office.

Mr. George Smillie of this city has also in his possession the remains of an upper set of teeth, which were worn many years by the late Aaron Burr, and which were constructed upon a similar principle in France, many years since. The teeth (made by Billar) were arranged upon a platina plate and silicious materials fused between and around them, so as to build up an imitation of the gum and alveolar process which had been absorbed. In fact, this style of work is not original with either of the above named individuals, though we doubt not each has a new composition peculiar to himself; but which is the best and most practicable, we cannot, for want of experience with either, at present decide. There are many new things, and old things in new dress, constantly appearing in the dental art, most of which, like bubbles, float and sparkle for a time, and then burst, and are blotted out. What will be the fate of the present and last, remains to be seen after it has been thoroughly tested by "the proof of the pudding."

DENTISTRY IN THE FAR WEST.

We have before stated that there was a vast field for good dentists in the western states, where there are but few, comparatively, who are well qualified to practice. The following is related by a subscriber:—

“A dentist in practice more than ten years, was called upon by a lady to have the left superior cuspidatus extracted. He took the key, placed the fulcrum on the labial side, and broke off the crown, but, undaunted, laid hold again in like manner, and exerted a little more *skill*, and much more power, and broke off the alveolus up to the apex of the fang, embracing and carrying out the first bicuspid, the cuspid, the lateral and first incisors on that side, four in all; but the key now refusing to operate farther, he proceeds to drill up into the solid fang of the canine and apply the *screw*! but by the importunities of the poor suffering patient, and the advise of the family physician, then present, he dissected away the soft parts, and triumphantly removed the bloody mass of bone and teeth, declaring the lady was a *soldier*, and that he would return soon and remove the rest of the fangs and get up a fine *sett* for her, and only charge her his regular fee for extracting *four teeth*, and nothing *for all his extra trouble*! Benevolent man!

“I have repeatedly pressed this fellow to subscribe for the ‘Dental Recorder,’ ‘Register,’ ‘Journal,’ or ‘News Letter,’ but in vain.

“H. E. P.”

DENTAL COLLEGE AT NASHVILLE, TENN.

We have received several copies of the Nashville Banner, containing well written articles by Dr. B. Wood, on the necessity of establishing a Dental College at that place. Some time since we were told that a charter had been obtained, but we do not learn the reason why the school has not been organized. If cases like the above are frequent at the west, (we trust they are not,) we should say the sooner the college went into operation the better.

NOTICE.

We are requested to state that the teeth spoken of in the letter from Mr. F. H. Clark, (published in our last number,) as coming from New Haven, were not made by Mr. C. O. Crosby. We did not see them, and cannot say who was the manufacturer.

—Dr. Leslie's article will appear in our next.

NEW YORK DENTAL RECORDER.

Devoted to the Theory and Practice of
SURGICAL, MEDICAL, AND MECHANICAL DENTISTRY.

Vol. VI.

JANUARY, 1852.

No. IV.

DISCUSSIONS IN THE AMERICAN SOCIETY OF DENTAL SURGEONS.

The following discussion upon the treatment of irregular teeth, grew out of a paper read by Dr. Townsend. We have not yet seen this paper published, but from the tone of the discussion which follows, we judge that Dr. Townsend reprobated the very common practice of extracting the temporary teeth, before the teeth of replacement are ready to come through. This practice has prevailed to an alarming extent among dentists for many years, but within a few years last past, we have been convinced that a reform has been going on, and that dentists generally have seen, from the bad effects of this kind of practice, the importance of preserving in the dental arch, all the temporary teeth as long as possible. This is especially true in reference to the temporary molars, for if these teeth are lost long before the bicuspidés come to occupy their places, the first permanent molar will advance in the jaw, and occupy a space half its size too far forward, and of course abridge just so much the necessary space for the ten anterior teeth. This is the most common cause of that crowded condition which causes the canines to project in the form of *tusks*. In all cases where we are called upon to treat decayed and aching temporary teeth, we make use of all our resources to allay the pain before resorting to extraction. This has been our practice for many years, and we have witnessed its good effects. As the absorption of the fangs usually ceases after the pulp is destroyed, it is necessary critically to watch the growth of the tooth of replacement, and extract the temporary one at the right time, as by persisting in the jaw, the new one will be turned out of its proper direction, and produce the very difficulty which we desired to prevent.—*N. Y. Ed.*

Dr. Allen.—I must coincide with Dr. Townsend with reference to the impropriety of removing the temporary teeth. I have for some time stood alone in our city in reference to extracting them. I have again and again refused to do it on the ground that it would cause an absorption of the alveoli, and a consequent contraction, and I have made it a point never to remove them unless the permanent teeth were making

their appearance, and the fangs of the temporary teeth are likely to cut through the alveoli and gum. There are cases where the fangs do not absorb properly; in such cases it is better to remove them, for the permanent teeth are beginning to crowd them out. There has been a great deal of mal-practice in our city in that particular, and I am glad that the subject has come up, for it has perplexed me very much in getting the teeth straight, and I am in hopes that there are those here who have found less difficulty in regulating these teeth than I have. I have found it to take a year and a half to get a set of teeth true. My course of treatment has usually been, either to employ an inclined plane, to bring the mout, or springs, or wedges, or gum-elastic between the teeth or ligatures. I have adopted them all, but I hope I shall get light on the subject. I think it a very important operation to be able to treat the permanent teeth successfully so as to get a true arch, but I always make it a point never to remove a temporary tooth so long as it can be retained with propriety in the socket.

To a question as to his mode of treatment, Dr. Townsend said, the cuspidati were entirely outside of the arch, the bicuspidi were contracted so much that the point of the tongue could be got between them, and by putting in wooden wedges I got them so very much apart that the cuspis of the upper fell into the cuspis of the under jaw. The next thing was to bring out the incisors, that I did by making a gold band which pressed upon each of the cuspidati; then I had loops of gum elastic which were hitched upon this piece of gold, and these bands were changed every two or three days. When these were brought entirely into their places, there was another difficulty, which was this, that the molar teeth were so long that these did not strike up to the top, so that they had to be retained by ligatures. I had to tie the strings and leave them there until they could tighten themselves.

Dr. Westcott.—I suppose this is one of those subjects which is very difficult for reporters to make clear, or to be understood by ourselves without models. There are a few general principles which may be set forth in a general way. I would simply say that it is a subject to which I have given much more attention the last two years than in all my course of practice before, and if we could have a few models, to show precisely the mode of operation, I think we could make it very interesting to ourselves. The Dr. has mentioned the use of gum-elastic in regulating teeth. There are only two general points that I think of, that I care to state, and the one is that my experience has led me to this practice. I almost invariably make the plate precisely as if it was to make artificial teeth. Such a fixture as may be removed as easily as any plate of that sort, and with the strict injunction that it must be removed regularly and the mouth cleansed. Almost any thing you can put on is liable to injure the mouth and render the breath foetid. And it should be easily removed so that any intelligent person can adopt it from day to day. I can only speak of gum-elastic fixtures in a general way. I have excluded them from my practice, by having something to which all the fixtures are attached, so arranged, that you can change their direction, and by means of this I have been able to regulate any

cases that I have had occasion to regulate, for two or three years. An objection to gum-elastic is, that if you use it of sufficient thickness it is bungling. I am only speaking of my own practice. As I said before, I have long since ceased to condemn processes. I had a case under my hand, from a distance; a little girl of ten or eleven years of age came fifty or sixty miles to have a tooth regulated—a lateral incisor had come apparently almost out of the roof of the mouth, and it was behind the regular arch of the under jaw. My plan was at once to make a plate as though I intended to set in an artificial tooth, with firm clasps, to the temporary molar which she had in her mouth, then by soldering a spring on the outside of the clasp as it passed around the tooth, so that by bending it in any direction you pressed it down, and attaching the ligature to the tooth, I was enabled to throw it in any direction, that kept up a continual pressure, and it could be removed at pleasure. After straightening it a little in that way I ceased to use ligatures. I made a constant spring under the tooth and it was so arranged that you could push it in different directions. It is necessary under such circumstances to keep the teeth apart, and instead of resorting to ivory blocks and that sort of thing, I soldered on gold blocks, and by this arrangement I was not under the necessity of seeing the case more than four or five times until its completion. After two or three days I sent her home, and she was there a fortnight, then she came to me again, and as soon as the tooth came out a sufficient distance for the under teeth to come under it, I took away the fixtures. My object in rising was mainly to express one or two general ideas. First, the necessity of having a permanent arrangement that sits easy, and which you can rely upon as a base work all the way through, and second, so arranged that it can be easily removed. By avoiding gum-elastic, and having the permanent plate so arranged, it would save a great deal of trouble.

Dr. Townsend.—For the mode of using the gum-elastic, I am indebted to Dr. Tucker, of Boston, who furnished me with some in tubes. I would state that we are very seldom compensated for this kind of work.

After this case was over to which I referred, the mother requested that I would send in my bill, which I did for \$150, and the same afternoon the father called upon me with a check for \$300, and said he was only too thankful that I had succeeded at all.

Dr. White.—I am very glad that this subject has been broached this evening. I think that although the regulation of the permanent teeth is a very important subject, yet it is more important to know how to preserve the temporary teeth so long that it may not be needed. It is strange that there is so much necessity for regulating the permanent teeth for the last few years. It argues either a want of confidence in nature to produce in a regular manner, or that the intermeddling of dentists have done more harm than they can remedy.

I would state, that I consider the subject of the regulation of the teeth of too much importance to discuss here without models. The President saw a contrivance in my office some years ago, which consisted of a spring, so arranged, that in its effort to straighten, all the time was

pressing the teeth out. It acts in this way, and does not excite inflammation. A small cut of it was given in the News Letter some time ago. The question has been asked of me here, what can we do when a child comes crying with a toothache. I would remark upon this that it is no more necessary to extract deciduous than permanent teeth. The treatment of the nerve will depend upon the condition of the tooth. It is true that as long as the tooth is in a vital condition, the fangs will go on absorbing, and as soon as the vitality ceases, the absorption will cease—maintaining the vitality of the deciduous teeth as being of absorption. If a patient comes to me at two or three or four years of age, I have every confidence that I can treat it as well as a permanent tooth. If the pulp is exposed, it can be destroyed and removed, and the tooth filled, and the tooth may be saved as long as required.

In reference to the treatment of toothache in children—I have less trouble in treating it than in grown persons. It seems to me that they suffer less from the same kind of inflammation. It is a common thing for children to cry for three or four days with toothache, till the family is out of patience, and want the tooth pulled. The tooth is tender to the touch, and the pulp is dead. I have found that by merely opening the dental cavity, and getting rid of the dead nerve, the pain will subside. Every day I have to open cavities to relieve patients, and often I put nothing in at all, letting them take the risk of aching again. When I treat the teeth for pain, I sometimes apply tannic acid and morphia to relieve the pain. In this way I coax along the deciduous teeth. I would state that I have only seen three or four cases that I can trace to natural irregularity. It is mostly artificial.

Dr. Dunning.—I wish to say that my practice with reference to deciduous teeth that are aching, corresponds almost entirely with that of Drs. White and Townsend. I am as anxious to retain them in their places as they are. There is one point, however, which I think was not touched upon by them. I think that where the pulp has died from exposure, and I have removed it from the tooth and filled the fang, I have found that all the symptoms of ulceration and irritation in the gums, have yielded much more kindly to that cleansing treatment, than in adult teeth. I found on examining my daughter's teeth, that one of them had the nerve exposed. I removed the nerve immediately, and filled its place with gold. The child has never had a moment's pain with it since. It has been with me a question I have hardly known how to decide, what was my duty when those cases were brought to me in the hurry of ordinary professional engagements—parents saying they are tired out with the crying of their children. I am perfectly satisfied that if I had the time to devote to these cases, I could generally relieve the pain and preserve the tooth till it was time to be removed. My course is generally to advise that they should retain it as long as possible. In those cases where children are brought to me regularly, I plug the deciduous teeth carefully, watching them with the same care that I do the permanent teeth. I direct the parents to have them thoroughly cleansed, not only with the brush regularly, but with floss silk, to prevent decay between them. In such cases, and with

children of my own family, I have never found any difficulty ; but parents do not think that children's teeth require attention. They attach about half-price degree importance to them in every respect. I have thought that I should like to confine my practice to the treatment of children's teeth, for there is a pleasure in knowing that you may do so much to render a long life happy.

Dr. Hill.—I would wish to say that this subject is exceedingly interesting to me, and it is important to the profession and the public ; and if any thing that we can say or do will have a tendency to spread abroad in the community an impression of its importance, we will have done ourselves and the profession and the public generally a very important service. There are so many difficulties in following out the dictates of our own judgment in matters of this kind, that this subject becomes more perplexing to the operator than almost any other. In the first place, the want of a proper remuneration for the trouble.

Secondly, the difficulty of operating upon little children. It is almost impossible to get children to consent in my practice, and I have supposed that I could manage children as well as the generality of gentlemen in the profession. The great thing is in the treatment of deciduous teeth. The mere cleansing of a cavity, when there is pain, I have found to give relief. If this will not answer, I have found that the application of chloric ether is almost always successful, and it being seldom the case that I can fill a tooth in a child to give satisfaction, I have recourse to one thing. The gentlemen will excuse me for naming it, but as we are giving the results of our experience, I may mention, that after cleansing the cavity, the easiest and best thing I know is to put in a little of "Hill's Stopping" and press it in the cavity ; it has almost always given relief.

On motion, adjourned.

[At the next sitting of the Society Dr. A. Hill moved that the members now have an opportunity for miscellaneous remarks ; which being carried, the following discussions sprung up.]

Dr. Robertson.—If there is nothing else before the Society, I would state that hitherto in my practice, I have taken some pains to find what would make the best dies for striking my plates. Latterly, I use an alloy by which I expect to fit the first time, and if I do not, I am am responsible for it. The alloy is a mixture of one part copper, two parts antimony, and six parts tin.

The copper is to be first melted. The advantages of it are that it shrinks very slightly, and it is so hard that the minutest point on it cuts its mark in a gold plate. I use lead for the female casting, and sometimes I prefer using type metal. Pure lead, without considerable care, may stick, and it may be necessary then to use chalk. It is so hard that it has a disadvantage of making the inside of the plate a little rough.

Dr. Bridges.—I merely wanted to remark that I have been for some time dentist extraordinary, ordinary, and certainly general, to the

King's county poor-house. It is very easy for a man to get a theory, but it is very hard to find one to suit all cases.

With the practice of Dr. White and Dr. Parmly, it is very different from what it is in a place where they have perhaps never seen a dentist in their lives. I can find five deformities from leaving the deciduous teeth in too long, for every one that a stated practitioner can show me from taking them out too soon. I had an invitation a few years ago to visit two asylums, and I found the children's teeth in a most wretched condition. Some of the deciduous teeth were as tight as the permanent, that were crowding others out of their places. I think the deciduous teeth should in all cases be taken out when the child becomes eleven or twelve years of age. I have often waited for the expansion of the maxillary bone, and have often been disappointed. The request I was going to make, was that there be a committee of an indefinite number appointed to investigate this matter of children's teeth, and that they take the opportunity, between this and the next meeting, of visiting asylums, where the children have not been visited by dentists, and that they supply casts at the next meeting.

This proposition was adopted, and the committee appointed.

Dr. White.—I offer the following resolution, with a view of establishing another committee upon a subject that I deem quite as important as this.

Resolved, That a committee be appointed to make microscopic observations, with particular reference to the characteristics of salivary calculus, and the fluids of the mouth in connection with the human teeth, and report at the next annual meeting.

The President.—This is a very important subject. Dr. Goadby, who assisted in the investigations made by Dr. Nasmyth, of Edinburgh, is now in this country, and I have no doubt will give us such information as will make these investigations most useful.

The resolution was adopted, and the following gentlemen were appointed the committee: J. D. White and E. Townsend, of Philadelphia.

Dr. White.—I wish to call special attention to the manner in which Dr. Arthur uses gold for filling the teeth.

Dr. Arthur.—I have for some time been making experiments with gold for filling teeth, and have fallen upon what I regard a very great improvement. I have no doubt gentlemen will be very much surprised at it, and will be doubtful of its utility. I use gold never finer than No. 30, and from that to No. 50, but I generally rely on No. 30. I use this not only for strong but for frail and most delicate cavities. By using this, I can do business about one-third greater in amount, and not only as well as when I used finer gold, but a great deal better. This is well worth the trial, and can be easily tested. The manner in which it is used is essential to success.

It is well known that No. 15 has been found very harsh and unmanageable, and so it is if the gold I use is folded even once. I take simply a slip of the gold, nearly or quite the size of the cavity, and I generally use very small instruments for condensing after the gold is

introduced. I don't know, however, that I have made any material change in my instruments since I commenced to use this thicker gold. I have found gold of this kind, in my hands, more manageable than any other. It is obvious that the surface of the filling with this gold must be better—there must be a fewer number of edges, and it will take a better polish.

President.—I don't know whether any one is present who was at a meeting at which I spoke of the gold used by Waite, of London. He was the Hudson of England when I first resided there. I thought the stoppings from his hand were different from others, and I felt anxious to know how he made them so solid; I made all the inquiries I could outside of his house, then I went to his house, and his brother brought into the room where I was, a part of a sheet of gold which was about the thickness of the lead which lines the China tea chests. He said there was but one man in London that could prepare gold in that way—it was as soft as the lead itself, and I have often wished that I could find such, but I never could. This corresponds with the remark of Dr. Arthur. Some years ago a very ingenious man who had something to do with the invention of the cotton gin, took it into his head that he could do much in the way of saving teeth. He drilled into the tooth, then cut a screw on the end of a gold wire, and screwed it into the tooth and cut it down, and it was one of the finest fillings I have ever seen.

Dr. Arthur.—I have used gold from several manufacturers. That which I now use I get from Abbey & Son. I find that the gold produced by them is generally of uniform quality at least. I do not wish to make an invidious comparison between the gold made at this establishment and that of other manufacturers; but it is of great importance in using gold of this kind that it should be of the best quality, and perfectly annealed. I would certainly advise any one who is disposed to use the gold of the kind I propose, if they are not satisfied on the first trial, to use that of several manufacturers before they throw it aside.

Dr. Allen.—I have invariably used gold as high as No. 12, and prefer it, but I am the only one that uses it in our city.

Dr. White.—I have used gold that is very heavy, and very light, and where we had to double the sheet upon itself, I am sure all must admit that it must leave a little opening and must become a little hard, so that it takes more pressure to accommodate it to the cavity—hence in a great many thin cavities I have used No. 3.

I will cite the treatment of a case in point. A lady had a front incisor filled three or four times that was decayed from the outer edge, leaving nothing standing except the enamel posteriorly and at the cutting edge. It had been filled several times in three months, but carefully, for fear of breaking. The last dentist, a gentleman in practice from twenty to twenty-five years, told her it was impossible to fill it without breaking. Some one induced her to call upon me, and I had some of this thin gold which I put into the cavity with gentle pressure. Having removed the decay the cavity was larger than before. The plan I took to cleanse it was one suggested by Dr. Williams. After

removing the principal part of the decay, I worked in with a small instrument and cotton, then I put this fine gold in until the cavity was filled, until I came within the thickness of the enamel to its surface. There was only now a small cavity and this I completed with No. 4. The lady is now a resident of your city. She was absent one year, and upon examination, the tooth appeared as perfect as on the day she left. I merely state the case to show that very light gold is sufficient to accomplish the end desired; but whether heavy gold would have accomplished the same end I know not. I have tried No. 59 in a few similar cases, and I believe I made very respectable fillings, but not so good as with gold that I was accustomed to.

Dr. Arthur.—I have found that No. 39 worked a great deal better than No. 50, so much so that I have discarded it.

Dr. Dunning.—I generally use No. 4, and would like to get No. 3 if I could.

Dr. Arthur.—It must be remembered that the point on which the principal advantage depends, is that it must be used in a single strip, and not doubled upon itself.

Dr. White.—Is it not being doubled while being put into the cavity. When you put the gold in the cavity where you want it, does it remain there?

Dr. Arthur.—It is not a half dozen or more surfaces folded together to be condensed afterward, but is condensed, fold after fold, as it is put into the cavity to be filled. But the utility of gold in this form can only be tested by actual trial.

Dr. Westcott.—On the point of keeping the filling where you put it, I will make a single remark. I have been much in the habit, for two or three years, of filling teeth with both hands at once. I had never done it or seen it done before. I manage to hold my napkins in a way that I can fill with my left hand and use two instruments, where the cavity is of such a shape that it is important that you have one point packed thoroughly, so as not to have it come out again. It is very risky, if you have a piece tumbled out several times. You get it hard by the working. I use only one hand for filling, and the other for holding it precisely and firmly where I know it will be wanted. I think that every dentist will find that he can do more in that way than he imagines. This is not one of those cases where you are under the necessity of hiding from your left hand what your right hand doeth. When there are large cavities, I uniformly employ an assistant. That idea of keeping the foil where you put it is important, with bicuspidates particularly, and those teeth where the cavity is long and narrow.

Dr. Foster.—I invariably use No. 4 gold foil in all cases—large as well as small cavities. In some cases I find it extremely difficult, even with most malleable foil, to keep it where I place it. If I have to use a different foil, I shall have to learn my lesson over again; for, as I use it, it must be rolled together, and it is important that I should have the most malleable foil. I have tried, repeatedly, in large cavities, to use thicker foil, thinking I might get along faster; but it rolls about and gets out; and I now invariably use No. 4.

Dr. J. Tucker, of Boston.—I have used nothing but No. 4 for the last fifteen years, except where other has been sent to me for trial; and in such cases I have always failed, and given it up.

Dr. Arthur.—The kind of gold I have recommended could not be used in the manner described by Dr. Foster.

Dr. White.—I would like to state in what manner I use it. For general use, I take a strip of gold and roll it together spirally. I use No. 4 and No. 6, pretty equally divided. If I can deliberately press upon the tooth, I use No. 6, but in lateral cavities I use No. 4. If the cavities are very large I use pellets. I take a straight and narrow watch spring, to which I have added a little round piece of wire, so that I can turn it with facility; I fold it on this watch spring flat; this facilitates my rolling. In some few cases I use it in that form for small cavities. In this way, it is folded so that every leaf is in close contact, and the atmospheric air can be pressed out better than if it is folded.

Dr. Arthur.—Gentlemen may have been in the habit of using the gold of the ordinary number in a different way from what I have done. I almost invariably folded it in strips on itself. This, it will be seen, is a considerable step toward using the thicker gold, which I propose. And it may not, therefore, be found, at once, so advantageous in the hands of others as I have found it. But I am convinced that, if it is fairly tried, it will be found very useful in many cases, even if it should not be adopted for general use.

LETTER FROM DR. LESLIE.

Cincinnati, Dec. 4th, 1851.

DR. C. C. ALLEN. Dear Sir:—Your welcome monthly has just come to hand. In it I observe a letter from Dr. Bridges respecting Dr. John Allen's improvement.

Believing that as a journalist it is your desire as well as that of Dr. Bridges, not to lead the profession astray in regard to the so-called improvement, I have thought it my duty to correct some of the mistakes made in the letter of Dr. B.

I will not at this time stop to notice the exactness with which Dr. J. Allen has observed "the most stringent laws of professional etiquette," as claimed by Dr. B., as I wish at present to occupy as little space in the Recorder as possible. Perhaps at another time I may speak of it. At present I have a few words on his reference to the action of the Mississippi Valley Association.

Dr. B. in his fourth paragraph says, "Dr. Allen exhibited specimens, which he minutely described." Let me assure Dr. B. that in this he has been very much misinformed. I was present and heard every word of his description. It was no fuller than his first advertisement in the

Register. *Not one* of the materials forming the cement *was named*. *Not one principle* on which they were compounded was developed *in any degree*. He said an important part of the invention, was the material which held the teeth truly in place during fusion of the cement. This he did not *exhibit, name or describe*. One member in his simplicity asked what it was, when the doctor enlightened the Association by saying "it was plaster and *a-a-another substance!*" Very minute, ain't it?

Dr. B. further says, "at the same time gives them full liberty to test in various ways." There was *one* piece with which full liberty was taken by some of the committee. This was a specimen of four or five incisor teeth, set on a piece of platina plate, which I judged to be four lines thick, three-fourth of an inch wide, and about one inch long—no clasps. The plate had been struck up on a rather prominent ridge. The *edges* were bent up so as to form a catch for the cement; at the same time adding *strength* to the plate. The whole surface of the plate was covered thickly with the cement, which also came up round the teeth pretty well. It was altogether *unfit* to go in the mouth, but altogether fit to stand the force of the thump and index finger of both hands, which were all that could be applied to it, owing to its shortness. This specimen *was made*, Dr. Goddard told me, to test *the strength of the material*, and was placed in my hands for that purpose. This was the only specimen full liberty was given to test the strength of.

Fifth paragraph. "With a promptness and fairness perfectly characteristic of our western brethren, a committee was appointed." This should have read "with a promptness &c," a resolution accompanied by a preamble was offered, awarding to Dr. A. a gold medal. The writer of this not being prepared, as other gentlemen appeared to be to vote on this without *some* enquiry, it was on his motion laid on the table until the afternoon session.

During the recess, one objection (Allen's avowal of his intention to patent) was stated by me to the prime movers and to Dr. Allen. This opposition caused a change in the sentiment of Dr. Taylor. He then, not succeeding in an *irregular way* to dispose of the gold medal resolution, moved *its* reference (not the specimens) to a committee of three. This the published minutes will show. So that the business of the committee was not what the doctor has been led to believe, "examine *critically and testing thoroughly the utility and practicability* of the new system before them, in specimens of artificial dentistry." It would, in my opinion, have taken *at least* a year to form a correct estimate of its utility. It would also have required a knowledge of the mode of work

This the committee did not lay claim to. 'Tis true the majority of the committee reported *as though* the specimens had been referred to them, but this construction I objected to at its first meeting, and already I suppose they begin to see part of the error of their position, now that *experience* is beginning to be recorded. Dr. B. says he and Dr. Smith have supplied several *upper dentures*. Why not some *lower ones*? Also he says, "There is still another obstacle to the full success of this system, viz: so high a heat is required to fuse the material as to make it *quite uncertain about using gold plates*."

This latter difficulty, however, I perceive by the outside pages of the Recorder, has been overcome by Mr. S. A. Main, Dental Surgeon—he styles it "The Greatest improvement of the age in Mechanical Dentistry." He can use platina, gold, or silver, because his cement fuses at a low heat. I wonder if this gentleman reads our periodicals? if he does, but has not lately, owing to the laborious attention he has given to the development of the principles of this "great improvement," I would advise him to read Dr. Hunter's letter on page 278, vol. 5, Dental Recorder. He will there see that "The Greatest Improvement" was made before he had developed it.

More than three months ago I saw and tested (*more fully* than Allen's best specimens were tested) in concentrated acid for weeks without change, a specimen of teeth on *silver plate*, mounted by Mr. Steemer. Justice to all, is my motto, and this it is which prompts me to request the publication of this in the December number of the Recorder.

The consenting to this will greatly oblige

Yours, respectfully,
A. M. LESLIE,
One of the Committee

THE TREATMENT TO PREVENT IRREGULARITY OF THE TEETH.

BY C. C. ALLEN.

The importance of a knowledge of the time, and the signs which precede the eruption of the first set of teeth, to the dentist and the practicing physician, cannot be too highly estimated; but if parental solicitude is then manifested on account of the health of the child, during the process of "teething," the same anxiety exists during the shedding of those teeth and their replacement by the permanent set, lest irregularity and deformity result from it.

So much does a beautiful and regular arrangement of the teeth contribute to the pleasing expression of the human countenance, the correct enunciation of language, and the due and proper mastication of the food, that it becomes an object of the first attention to the physician who has the medical and surgical care of a family, as well as the dentist, to know where irregularity is to be apprehended, and the proper means to be made use of to prevent it.

By proper attention and examination of the teeth and jaws at about the age of seven years, a very correct prognosis with regard to the second set may be formed.

If the child is of a good constitution and has had no severe disease during the first five or six months of its life; if the jaws are well developed, in a circular form, the palate offers a flattened and regular concavity, the lower jaw does not project beyond the upper, and if the temporary teeth are rather large, free from caries, regularly developed, and have a small space between them, the prognosis may be favorable, and there will be but little danger of irregularity.

But if on the other hand, the constitution be feeble, and the child has been sickly; if the jaws are contracted laterally into an elliptical form; the palate bones form a high vault like a Gothic arch; if the chin be prominent or if there be any hereditary tendency to a protrusion forward of the lower jaw; if the temporary teeth are much decayed, and above all, if any of the molares have been extracted, there will be great danger that the second set, if left to nature alone, will be crowded and irregular.

In the absence of a competent dentist, every physician should make a regular and thorough examination of the teeth and jaws of the children under his charge, soon after the first permanent molaris has made its appearance through the gum, (which, it will be recollected, is before any of the incisores have been shed, or about the age of seven,) and if any of the unfavorable signs are exhibited, which I have just alluded to, he should apprise the parents of the danger to be apprehended, and the importance of early and constant attention until the whole process of exchanging the teeth has been completed.

In almost all cases where the favorable indications exist which have just been pointed out, there will be but little for the physician or dentist to do during the shedding of the temporary teeth and their replacement by a permanent set. The fangs of the first set will generally be absorbed in regular order, as the crowns of the second rise in their sockets, until they fall out of their own accord, or are removed by the child. It

is a common error to suppose that when the temporary tooth begins to be loosened, it must be extracted. The fact that it is growing loose shows that nature is performing her own work, and needs none of our assistance. Only in those cases where the permanent tooth can be perceived by the protrusion of the gum, or where the edge has already passed through it, and the temporary tooth remains so firm in its socket as to impede the progress of the new tooth, or turn it out of its natural direction, should it be extracted. In all such cases no time must be lost before removing it, as by persisting in the jaw the permanent tooth may be so far turned out of its natural direction as to establish a permanent deformity.

It will be recollected that, while the pulps of the permanent teeth were enclosed in their sacks, their position was below and behind the fangs of the temporary teeth, and when they emerge from the gums the points are generally a little posterior to the fangs of the temporary teeth. This fact sometimes gives great anxiety to the parents lest the teeth grow too far in the mouth;* but in general if the milk tooth is removed the tooth of replacement in a short time comes into its proper position without any assistance from art.

When the superior central incisores first make their appearance, owing to their great width, they are frequently crowded, and sometimes overlap each other; but in a short time, if the general indications are favorable, these too advance in the dental arch and thereby obtain sufficient room, without impinging too much on each other, or upon the laterals.

Again, when the eye teeth, which are usually the last of the teeth of replacement, first pierce the gum, they often come through some distance above the ridge of the alveolar process, and present the appearance of growing in the wrong position; but unless the space between the first bicuspid and the lateral incisor be less than half the breadth of the crown of the cuspidatus, this appearance will prove deceptive and the eye tooth will finally come down into place and occasion no deformity. This deceptive appearance results from the fact that the cusp which first shows itself through the gum is situated on a line with the front surface of the tooth, but the great portion of its crown and fang being posterior

* This is one of the most critical periods of dentition, for as the permanent incisores appear behind the temporary, if the latter persist in the jaw, or if the space be too small for the former so that it cannot come forward into its proper position until it is so far developed that its point strikes back of the lower teeth, when the mouth is closed it will of course become a permanent deformity, being held in its mal-position every time the teeth are closed.

to the cusp and vertical in the jaw, is just in the position to come down and force itself directly between the adjoining teeth.

Many dentists and physicians deceived by these appearances, and fearing irregularities, are led to extract the adjoining temporary tooth to make room for the advancing permanent one; an operation which, when commenced, must frequently be carried on with each successive tooth until in the end, two of the permanent teeth have to be sacrificed to make room for the last of the advancing set. For instance, when the central incisor makes its appearance, being broader and occupying more space than the temporary central, the lateral incisor is removed to make room for it. Again, when the lateral incisor cuts the gum, the temporary eye tooth must be extracted. If now the permanent cuspidati make their appearance before the bicuspidates—which they often do when the temporary ones have been extracted—one of the molares must be extracted, and so on until the ten teeth of replacement are grown.

This practice was recommended by Mr. Fox; but he was obliged to admit the necessity of extracting two of the permanent teeth. The following is his language.

“When the incisors are perfectly regular, and the bicuspidates have appeared before the cuspidati, there is so little space left that the cuspidati are thrust too far forward.

“It has been the common practice to admit the cuspidati to grow down to a certain length, and then to extract them. This operation certainly removes the deformity of the projecting teeth, but it destroys the symmetry of the mouth, and takes away two teeth of great importance. The cuspidati are exceedingly strong; they form the support of the front of the mouth, and in the advanced periods of life, to those persons who have the misfortune to lose the incisors, they furnish an excellent means of fixing artificial teeth.

“On these accounts they should be preserved, and therefore it will be right to extract the first bicuspid on each side. The cuspidati will then fall into the circle, and if there should be any vacant space, it will be so far back, that no defect will be perceived. This is often the case in the under jaw as well as the upper, and the same practice ought to be adopted.”

M. Delabarre, in his treatise on second dentition, very justly remarks, while commenting on this practice:—“Many a young person, whose dentition has been thus conducted, after having endured the extraction of twenty still solid temporary teeth—an extraction made with the view of arranging those of second growth—has finally been deprived of four

conoids, or eye teeth, and which perhaps would have been preserved through the whole of life, even as we had occasion to observe on a great many old men, to whom these still remained. Those, therefore, who thus conduct dentition, fall into the very difficulty which they most wished to have avoided; for their intention was to *prevent dentes excedi*, and these are the very results of their operations."

If we take into consideration the naturally crowded and imbricated position which these teeth occupy while enclosed in their sacks, together with the fact that as they emerge from the gums they advance and expand to form an arch of much greater dimensions than the one which they occupied while in the cavities of reserve, or when but half grown, we shall readily perceive how space for the incisores will be gained as they advance in growth, and how their crowded appearance, so deceptive at first, gradually grows into order and regularity, without the extraction of the adjoining teeth.

The incisores, cuspides, and bicuspidēs, when well developed, constitute an exact semicircle, the external circumference of which measures, on an average, three inches. The average measurement of the semicircle formed by the ten temporary teeth is about the same, while the external circumference of the crowns of the ten anterior permanent teeth which are to replace them, when emerging from their sacks, measures only about two inches and a half.* Thus it will be seen that as they emerge from the jaw they are constantly gaining room until the circumference of the arch is completed. This increase of space is in many cases equal to that occupied by a central and lateral incisor, between six and seven lines, which is gained in the circumference of the arch, after the edges of the teeth have cut the gum.

When, therefore, we find the incisores but little crowded or but slightly overlapping each other, we may let them alone, and trust to the natural method to bring them straight and regular.

When the indications are unfavorable at the age of seven, from any or all of the appearances which have been described, and we have reason to apprehend an irregular and deformed denture, a very different course must be pursued, and the physician or dentist will then have need of all his care and skill to insure a regular set of teeth and prevent a permanent deformity.

I shall now endeavor to describe some of the irregularities which

* This is best seen in an osseous preparation where all the teeth are *in situ*, the subject having been between the seventh and eighth year.

arise when nature, from any cause is impeded or frustrated in her work, during the process of dentition, and the means which should be used to assist her; for it must be remembered that "the efforts made to remedy or prevent irregularities in the arrangement of the teeth, should always be in strict accordance with nature."* We are not to attempt to take the work out of her hands, but to co-operate with her to produce the desired result.

Irregularity may arise from "a want of concert" between the absorption of the fangs of the temporary teeth and the growth of the permanent. If the absorption be too slow the teeth come through the gum and are forced into a wrong position by the persistent fangs of the temporary teeth, or it may arise from the size of the permanent teeth being too great for the space afforded by the temporary. When caused by the persistent fangs of the temporary teeth, this form of irregularity may become permanent, if not prevented in time by the extraction of the teeth which remain in the way of the advancing set. That form of temporary irregularity which arises from the disparity of size between the temporary and permanent incisors, is best relieved by the loss of the temporary molares. The average measurement of the four temporary incisors is ten-sixteenth of an inch, or three-sixteenth less than that occupied by the teeth of replacement, while the temporary molares occupy a space three or four-sixteenths greater than the bicuspidés by which they are to be supplanted, so that the space occupied by the temporary teeth, and the ten permanent ones which are destined to take their place, is the same. If this fact be born in mind no danger will be apprehended from the temporary irregularity of the incisors.

Let us now suppose that one of the centrals has made its appearance, but so disproportioned in size to that of the tooth which has been shed that there is danger of its being permanently pressed out of its natural position unless more space is afforded for it immediately; room is made by extracting the temporary lateral, and in a short time the other central is seen in the same condition and is treated accordingly in the same way.

Within a year from the time of the eruption of the central incisor, the lateral begins to make its appearance through the gum, and finds itself as much cramped for room as the central had been, in fact more so, for the permanent central frequently occupies almost all the space originally allotted to the temporary central and lateral. Now, to make

* Harris' Dental Surgery.

room for the lateral, instead of removing the temporary cuspidatus as recommended by Mr. Fox, we extract the first molaris which is just behind it, and which allows the cuspidatus to yield as the lateral incisor gradually comes into its proper position.*

The next tooth which in the natural order of dentition, and during the tenth year, makes its appearance, is the first bicuspis, which if not much larger than usual, forces itself between the second molar and cuspidatus without any difficulty. If, however, the space be too small for it, and it begins to show signs of growing in a wrong direction, room may be obtained by extracting the second molaris, but this should not be done in a hurry. Within the eleventh year the second bicuspis may be expected to take the place of the tooth last extracted.

By this mode of treatment we have preserved the temporary canine, and may expect its place to be occupied by the permanent eye tooth some time within the twelfth year. When this plan of treatment has been followed, in a well developed jaw, I have never known an irregularity to become permanent, nor will it often become necessary to remove any of the permanent teeth to insure a handsome set. The same treatment is equally applicable to either the upper or lower jaw.

Sometimes it happens that the cuspides are shed, and the permanent eye tooth makes its appearance before the bicuspidates. When this is the case, if there is a deficiency of room, the first or second molaris may be extracted; but the space usually occupied by the temporary molares and cuspides is equal to that of the bicuspidates and the permanent eye teeth, so that if no room be lost, by extracting the temporary teeth too early, all the teeth of replacement may be brought into the arch.

In extreme cases, however, when it becomes necessary to sacrifice one of the permanent teeth, a bicuspis should always be selected in preference to an eye tooth, as these latter, next to the incisores, are the chief ornaments of the mouth. They are the largest and strongest of the front teeth, and form the chief support of the anterior portion of the jaw. The loss of an eye tooth destroys the symmetry of the teeth, and often occasions a permanent depression in the alveolar process where its fang was situated.

* By this time the fang of the eye tooth is so much absorbed and loosened that it very readily yields to the pressure of the lateral. In many cases the lateral incisors pressing downwards and forwards against the centrals on one side, and the temporary canines on the other, will expand the arch so as to come in regular without extracting the bicuspidates. It must be born in mind that at this early age, all the teeth are much more yielding in the jaw than at a later period.

By far the greater number of cases of irregularity in the arrangement of the bicuspid teeth, in both jaws, which have come under my observation, have arisen from the early loss of the temporary molares by caries. This source of irregularity has scarcely been noticed by any of the writers on Dental Surgery which I have seen, but in our country is certainly more productive of that crowded condition of the bicuspid and canines than any other. By the end of the third year the temporary teeth are all fully developed in each jaw, where the molares and cuspides should remain from seven to nine years before they are replaced by the permanent set at the age of ten, eleven, and twelve. In many cases however, the temporary molares begin to decay before half this time has elapsed, and at the age of six or eight years caries penetrates to the nervous pulp of the tooth, and causes such inflammation and pain that it is extracted, in order to relieve the suffering of the little patient. If this happens before the seventh year, and if the tooth extracted is the second molaris, the first permanent molaris will frequently make its appearance soon after, and before space has been formed for it by the natural development of the jaw; but it will grow forward and occupy a part of the space made by the tooth which has been extracted. A similar effect will be produced if the crown decays and breaks away, and the fangs are suffered to remain in the jaw, these occupying less space than the crowns, will be pressed together by the gradual development of the tooth behind them, which will come forward and occupy a portion of their space: for it is a general law in the development of the teeth that the permanent molares make their appearance through the gum soon after a place has been formed for them, whether this be by the natural development of the maxilla or the extraction of one of the temporary molares. By this means the molares on each side of the jaw often appear during the sixth year, and half their size too far forward in the jaw; and as these teeth form the solid abutments upon which the arch formed by the ten teeth of replacement is to be built, it follows as a matter of course that it must be crowded and irregular or some of the teeth must be left out. When this is the case it is a matter of great importance to decide which of the permanent teeth should be extracted.

Before the time of Mr. Fox, the practice was, to wait until all the teeth were developed, and then extract the irregular one, which is usually the eye tooth, but that writer advised the removal of the first bicuspid so as to allow the eye tooth to come into its place. This practice has been generally followed, although some have thought it

better to extract the second bicuspid, that the space, if not entirely filled, may be farther back in the mouth, and therefore less conspicuous. Mr. Leonard Koecker, author of a practical treatise on dental surgery—was the first to recommend as a general practice the removal of the first permanent molaris, although both Fox and Bell advised it whenever this tooth was decayed. Says Mr. Koecker. "The first molares are generally most predisposed to disease; they are least important, as it regards both appearance and utility; and so situated as to afford, by timely removal, sufficient room for the anterior teeth, as well as for the second and third molares. If these teeth are extracted at any period before the age of twelve years; all the anterior teeth will grow more or less backwards, and the second and third grinders so much towards the anterior part of the mouth, as to fill up almost entirely the vacant spaces caused by the removal of the first molares." By this treatment Mr. Koecker thinks that "all the teeth will be improved in strength and health, and particularly the dentes sapientiæ, which will sometimes penetrate the gums much sooner, and prove of larger size and possessed of greater firmness than usual."

Dr. J. B. Mitchell, in an article published in the *London Medical Gazette*, urges the expediency of extracting the permanent molares *when the bicuspidæ are sound*.

In the treatment of all the cases of irregularity which I have described, it is important that we should be governed by general principles. It will be necessary to take into consideration the health and strength of the patient, and the degree of development of the misplaced tooth. If the permanent regularity of a second tooth is endangered by the presence of the temporary, it should at once be extracted, for, however important it may be to preserve the temporary teeth, it is better that in the end a permanent tooth should be sacrificed than that the others should be deformed.

If a case is presented such as has just been described where the molares are too far forward, and the eye teeth are struggling for room, the condition of all the teeth should be taken into consideration; if the molar tooth is decayed and the bicuspidæ are sound, the former should undoubtedly be sacrificed; if not, but all the teeth are sound and not particularly predisposed to decay, by any congenital mal-formation of the crown or enamel the second bicuspid should be selected, unless the eye tooth is so far developed that there is danger that the first bicuspid may not yield sufficient to let it come into place, in which case the first bicuspid should be immediately extracted. Again, if the lateral incisor

has been allowed to take a position out of the circle, and the patient is so situated, from any cause, that it cannot be brought in, it may be advisable to extract it and let the canine come in farther forward. While if the eye tooth itself has been fully developed for some time under the lip in the form of a tusk and the patient be too old or not disposed to have it regulated, it will be the best practice to remove the deformity by extracting at once the misplaced tooth. There is no fixed rule which can be laid down to govern our treatment in any one case; but each one must bend to the circumstances of the case to be treated. It will therefore be advisable when difficult and complicated cases are to be treated, that the younger members of our profession should call in the advice of the older and more experienced, in consultation, that the best council may prevail. Relying upon their own knowledge, the timid often allow the proper time to pass by without resorting to the necessary operations, while the reckless and daring as often do too much, and thereby entail misery and deformity to their patients.



ALVEOLAR ABSCESS.

DR. ALLEN. Sir:—A case of alveolar abscess lately came under my observation, a brief notice of which may not be uninteresting. A young married lady, recently called upon me, by advice of her physician, for the purpose, if necessary, of having the left inferior dens sapientiae extracted. After examining the tooth together with the second molar, and finding them perfectly sound, I interrogated her in regard to any pain which she had felt in those teeth. She informed me that they had never pained her. The first intimation she had of any difficulty in that part of her jaw, was, when it commenced swelling; which increased until her physician lanced the gums freely, from which she derived but little benefit. He then made an incision upon the outside, from which there was some discharge, but no indication of healing. In examining and sounding the teeth, I found the second molar, somewhat loose and slightly sensitive to the touch. The dens sapientiae was firm in the jaw, and not morbidly sensitive, and from the circumstance of the tooth having just emerged from the gum, and impinging against the tooth in front, and from other circumstances mentioned above, I concluded to extract the second molar, and accordingly did so. She returned home, but called again in the course of eight or ten days, having derived no benefit from the extraction of the tooth. I then extracted the dens

sapientiae, and removed some portions of fungous matter. Her physician then with the use of the syringe, astringents, &c., soon prepared it for healing.

In the above (or forgoing) case a question arises in my mind. Was the inflammation and consequent ulceration produced by irritation from the cutting of the dens sapientiae, or did the disease originate in the alveolar process? Perhaps you can enlighten me on that subject.

J. C. D.

It is no unusual thing for the inferior wise teeth to produce considerable inflammation while cutting the gum. This is particularly the case when they are cramped for room, as in the above case. Mr. Liston and other surgical writers have described many cases of this kind, and they are common with practicing dentists. From the above description we have no doubt but what "the inflammation and consequent ulceration" were caused by the crowded condition of the wisdom tooth, and after it had taken place, and the fistulous ulcer was formed, could not be relieved by extracting the second molar. If this operation had been performed early, before ulceration had taken place, this consequence of the inflammation would have been prevented, as the wisdom tooth would then have come forward in the jaw. We think it would have been better to have removed the third molar at first, instead of the second.—*N. Y. Ed.*

FLAX COTTON.

Great Falls, N. H., Dec. 22, 1851.

DR. C. C. ALLEN. Dear Sir:—Enclosed I send you a new material for drying cavities in teeth preparatory to filling. A substance which would do this to perfection, you are aware, has ever been a desideratum, but, I think, after having first made use of this article, no operator will endeavor to procure anything better. I think it answers for this purpose *perfectly*. I have been constantly using it for some months, and am so pleased with it that I almost fancy I could not plug any more teeth without it.

This is what is now known under the name of "Flax Cotton." Perhaps you have seen it before,—at least you must have read of it. You will remember it is prepared by a chemical process, which minutely divides the coarse fibres of the flax. I wish you to give it a trial and

inform the readers of the "Recorder" of whatever merits you think it possesses.

Truly yours,

A. SEVERANCE.

We have tested the "flax cotton" sent by Mr. Severance, and find that it answers a very good purpose for drying cavities. Its power of absorption is superior to that of cotton, and more nearly resembles the lint of old linen.—*N. Y. Ed.*



DR. TOWNSEND'S ADDRESS.

We have received a copy of the address delivered by Dr. E. Townsend before the "Pennsylvania Association of Dental Surgeons," and have perused it with pleasure and profit. In this address Dr. T. discusses the subject of "Individual Improvement in the knowledge of our profession, and the advancement of the profession itself," in connection with Dental Societies and Dental Colleges. Upon the subject of Dental Societies, he takes the very just ground, (which we have always contended for) that the object should be "to gather together, not only all the worthy, according to some high test of scientific merit, or popular reputation; but also all that are worthy of the honorable office of teaching and being taught by each other; in other words, all that are capable of the reciprocities of a brotherhood." In reference to a society composed only of those who are "equals," he says—"It is only a set of proud men trying to make other men keep their distance, and rendering them no other service than that of keeping their own at the same time." Upon the subject of Dental Societies therefore, the doctor is eminently liberal, and comes up to the only principle of association which we can conceive of for *mutual improvement*, because it admits at once the need of improvement on the part of some of the members, as well as a willingness to impart instruction by others.—An aptness to learn as well as to teach.

For the advancement of the profession of Dentistry, Dr. Townsend advocates the plan of separate institutions, or Dental Colleges, in preference to Dental Professorships in Medical Colleges. We have not space at this time to examine his arguments upon this topic. Our readers are aware that the comparative merits of these two plans have been discussed somewhat at large during the past year by Dr. E. B. Gardette of Philadelphia, and Professor Harris of the Baltimore College. In the first number of the first volume of the Dental Recorder, we gave

our views briefly in favor of teaching Dentistry in Medical Colleges, and we now think that it is a matter of great importance to the profession of Medicine that its practitioners should be better instructed in the nature of the diseases of the teeth and their modes of treatment. This Dr. Townsend also admits, and we believe all dentists will agree to it. As the subject of separate Dental Colleges is one of general interest, we shall again recur to it.

THE FIFTH PAIR OF NERVES.

Mr. Henry A. Daniels of 58 Lispenard-st., has recently published a view of the *Tri-facial* or fifth pair of nerves, together with several other plates, showing the minute anatomy of the teeth. The vascularity of the pulp, the enamel fibres, the dentinal tubes, and the characteristic corpuscles of Purkinje, are very well shown in these drawings, together with the distribution of the branches of the fifth pair.

It is published on board and can be had of the publisher, 58 Lispenard-st., or at Jones, White & Co's.

DENTAL LITERATURE.

In a paper read before the American Society of Dental Surgeons upon the subject of "American Dental Literature," by Dr. Robert Arthur, the author states that the first book upon the teeth, published in this country, was a *Treatise on Dentistry*, by B. T. Longbottom, Dental Surgeon. This book contained 68 pages, and was published in Baltimore in the year 1802. The next work, according to Dr. Arthur, was *A Practical guide to the Management of the Teeth*, by L. S. Parmly, Dental Professor; published in 1819.

We have in our library a small book, containing 140 pages 12 mo., published in 1814. The title of this book is *A Treatise on the Management of the Teeth*, by BENJAMIN JAMES, M. M. S. S., "*Solatium Afflictis*."

This little book is well written and contains much useful knowledge. It is intended to impart general information to the public and not for the edification of the profession. From it we learn that imposition and quackery were then practiced as in our own day. The writer says,— "Most people may be deceived at the time of an operation, though woful experience in a few months unfolds the deception. The impostor is sought for to make reparation, or to receive merited punishment; but

the bird has flown; he is gone to practice his tricks and deceptions among those who know not his character, until prudence drives him to another seclusion from revenge, into another *shoal of gudgeons*."


Dr. Arthur gives the titles of between thirty and forty volumes, embracing the "American Dental Literature," which has been published during the present century, this is exclusive of the foreign authors which have been republished in this country. There are many other popular treatises which are not enumerated with the above works.


THE DENTAL TIMES AND ADVERTISER.—This is a new periodical edited by Alfred A. Blandy, M. D., D. D. S., junior editor of the American Journal of Dental Science, and published quarterly, "intermediate with the issue of the American Journal, so that six weeks will only intervene between the publication of the Journal and Times." The two numbers which have come to our hands are filled with interesting matter to the dental operator who desires to be posted in all that is transpiring in our profession.

THE DENTAL NEWS LETTER.—Messrs. Jones, White, & McCurdy have enlarged their periodical to about double the size of the last volume. It comes to us as usual, filled with interesting and instructive articles in every department of dental Art.

DENTAL SYRINGES.

Small glass syringes have been long in use by dentists for rinsing chips and dust from cavities in the teeth while excavating them. Messrs. Jones, White & Co. have an assortment of beautiful gold and silver syringes for this purpose which for beauty of workmanship excel anything in this line which we have seen and fully equal the most exquisite pencil cases.

 Having procured new plates for Deware's Dental Record, we are now prepared to furnish the profession with any quantity required. They are printed on all sides for keeping a permanent record of operations, or on only one side for bill-heads. Every practicing dentist will find it a great convenience to keep recorded, in his office, every operation which he performs, and for this purpose nothing answers better than the above.—See advertisement.

 Our readers will see by Mr. James Alcock's advertisement that he is prepared to furnish teeth suitable for setting on the new plan practiced in Cincinnati.

NEW YORK DENTAL RECORDER.

Devoted to the Theory and Practice of
SURGICAL, MEDICAL, AND MECHANICAL DENTISTRY.

Vol. VI.

FEBRUARY, 1852.

No. V.

DISCUSSION ON DR. DRAKE'S INTERROGATORIES.

CINCINNATI, Sept. 2, 1846.

To the President of the Mississippi Valley Association of Dental Surgeons :

SIR :—In the Historical and Practical Treatise on our Diseases, which I am now engaged in preparing for the press, I have appropriated a chapter to maladies of the teeth ; and am anxious to obtain from gentlemen devoted to their treatment, as much information as possible. Permit me, then, to request of the members of the Association over which you preside, such facts and observations as they may be able to communicate, on the following points :

1. What is the nature of that diathesis or constitutional predisposition or disorder, (if any,) which so often occasions decay in the deciduous teeth of our children ?

2. To what causes, external or pathological, local or constitutional, shall we ascribe the premature decay of the second teeth, in the West ?

Is a hereditary, scrofulous diathesis a cause of infirm teeth ?

Is dyspepsia a cause of early decay ?

Does the acid thrown up by many dyspeptics, in paroxysms of that disease, act chemically on the teeth ?

What is the effect of repeated salivations, on the teeth and gums ?

What are the effects of Tobacco on the teeth, and are those of chewing and smoking the same ?

3. Has the tartar of the teeth a constitutional origin ?

4. Is the decay of teeth greater in the West, than in the Atlantic States, in the same latitudes ; and is there any difference, in different latitudes, in the same meridians ?

5. Is there any difference as to soundness of teeth, between our native and foreign population ?

6. Are the teeth of our colored people, less subject to decay than those of white, who labor and live in a simple manner, as to diet and drinks ?

Replies to these questions, or information (not referred to in them)

on diseases of the mouth generally, communicated to me within the next few months, will be acknowledged as a favor, while I shall scrupulously give with every new or important observation, the name of its author. I have the honor to be,

Very respectfully, your obedient servant,

DANIEL DRAKE.

The questions were discussed in regular order, and the report is given from very brief notes, taken by myself at the time, hence the language cannot always be the same, yet the sentiments expressed will, we think, generally accord with the views of those who took part in the discussion. We feel that it would be impossible to give, to a hasty report of this kind, that zest and interest which was elicited in the discussion of these important questions.

The discussion was elicited and notes taken to aid in the making out of a report which Dr. Drake wishes for the third volume of the work which he is now publishing.

The first question ; " What is the nature of that diathesis, or constitutional predisposition or disorder, (if any,) which so often occasions decay in the deciduous teeth of our children ?"

Dr. Allen remarked that much of the decay in children's teeth may be attributed to want of cleanliness, inducing a vitiated condition of the secretions of the mouth. The too frequent and injudicious use of calomel in the treatment of those diseases peculiar to childhood, is a cause contributing much to this derangement of the secretions, and to the use of this remedy much of the disease met with in the deciduous teeth may be traced.

Dr. Ulrey cannot believe that there is a constitutional disease or diathesis inducing decay ; but agrees with Dr. Allen that vitiated secretions from the administration of mercurials prove very injurious to those teeth, and attributes the early decay of the deciduous teeth to the neglect of cleanliness. Thinks also that sweetmeats, candies, &c., are very pernicious, and thinks that the teeth of children raised in the country and generally kept from the use of such articles, better than those raised in the city.

Dr. Fitzpatrick would trace back the cause of decay in the deciduous and also permanent teeth to the chemical constituents of the teeth bone ; a defectively organized tooth caused by an impaired secretion cannot so well resist the action of agents inducing disease, and sees but little difference in the decay of childrens' teeth among the rich and poor ;

but, perhaps, the latter have the worst teeth, and this may be accounted for because more neglected.

Dr. Griffith attributes the early decay of the deciduous teeth to the decomposition of foreign matter about the teeth, believing a chemical agent to be thus evolved which decomposes the tooth substance. He cannot, however, decide as to the effect of temperament or a particular diathesis of the system, finding good and bad teeth among those of all temperaments.

Dr. Goddard does not think that they decay earlier relatively than the permanent; that they full as well subserve the purposes for which they are intended.

Dr. Allen thinks that they decay earlier, and says that he frequently meets with children, four years old, with their teeth all decayed, and that it would be difficult to find adults who so soon lose their teeth.

Dr. Griffith thinks they do not decay faster. These teeth are only designed for a short period of time, and many children retain all their teeth perfectly sound until they are displaced by the permanent set.

Dr. Ulrey remarked that he recently saw a gentleman, forty years of age, with five or six of the deciduous teeth still remaining in his mouth and perfectly sound.

Dr. Somerby remarked that the free use of sweetmeats, candies, &c., is the principal cause of decay in children's teeth. The presence of sugar induces the formation of oxalic acid, one of the most destructive to the teeth—many of the candies are colored and prepared with very deleterious articles sufficiently strong to exert an injurious effect on the teeth; but doubts very much if the teeth are often injured when in a pulpy state by febrile diseases.

Dr. Goddard believes in cleanliness as the great preservative to children's teeth, and enforces this in all cases, and with his own children it has proved all sufficient, decay only commencing in one instance, and that between the front incisors of his daughter; these he filled and they remained sound until pushed out by the permanent ones.

Dr. Somerby believes that the decay always commences externally, induced by a chemical agent, and that he never saw a decay take place between the enamel and the pulp.

Dr. McCullum thinks that the first primary cause is hereditary, and that the child inherits much in this way from its mother, and that the mother laboring under active disease cannot impart to the child firm and compact osseous structure. The second cause he regards as the too frequent period of taking food. The saccharine matter forms an acid

in the stomach, this is taken into the circulation or through the stomach to the teeth and decomposes them. The teeth of children have less earthy matter, hence are more easily acted upon by agents and decay faster. The food when taken into the stomach too frequently undergoes fermentation, and thus is unfit for nourishing the system or supplying material for a good osseous structure.

Dr. McCullum and several others remarked that hot slops, food, &c., induce decay, and gave as instance the cow and hog fed on hot slops. Teeth much used in masticating solid food are not apt to decay—friction is therefore preservative.

Dr. Somerby thinks that malaria exerts an influence indirectly on the dental organs, and gave as instance the relative condition of teeth in the high and low lands—agreeing with Dr. McCabe that the inhabitants of the mountainous countries have better teeth than the residents of low and marshy lands.

“To what cause, external or pathological, local or constitutional, shall we ascribe the premature decay of the second teeth in the West?”

“Is a hereditary scrofulous diathesis a cause of infirm teeth?”

Dr. Somerby has not observed this as a special cause of decay, having often met with persons victims to the worst ravages of this disease enjoying a perfect denture.

Dr. Allen has observed the same, and does not think it a cause of early decay.

Dr. Griffith has noticed the same, and thinks he has never noticed it as a cause of decay in the teeth.

“Is dyspepsia a cause of early decay?”

“Does the acid thrown up by many dyspeptics, in paroxysms of that disease, act chemically on the teeth?”

Dr. Somerby remarked that he had not been able to trace this as a special cause of decay, but thinks that an acid state of the secretions of the mouth is injurious, yet this is very often met with in persons not dyspeptic.

Dr. Allen has not been able to notice a special and rapid decay of the teeth from this cause, but has often observed sound and beautiful sets of teeth in dyspeptics.

Dr. McCullum thinks that the acid thrown up by dyspeptics act injuriously, and unless great care is taken must soon induce decay.

Dr. Griffith remarked that as a general rule he has not observed dyspeptics having worse teeth than others; yet when decay takes place on the neck of the teeth where there has been a recession of the gum

and the decayed portion irritated, that this irritation is kept up and increased by the use of acids, and that he has noticed that vinegar especially has this effect, and this he has tested by getting his patients to abstain as much as possible from its use, when the sensitiveness would in a measure abate.

Dr. Somerby remarked that vinegar is used frequently by surgeons and physicians for the cure of scurvy. In long voyages on the ocean it is considered important to have it along, and to be used bountifully, but it may, as Dr. Griffith says, keep up the irritable condition of the decay on the necks of the teeth.

Dr. Hunt thinks that nearly all the acids will injure the teeth. Different acids have a different affinity for lime, which constitutes the basis of teeth bone, and some of the acids are regarded as having less affinity for the lime than the phosphoric will decompose the tooth substance. The acids found in the stomach of dyspeptics are the nitric, tartaric, &c.; these, especially the tartaric, act rapidly on the teeth. The carbonic has a less affinity to the base of the teeth.

The acids of fruit he thinks injurious, and that the acids formed in the stomach of dyspeptics, and thrown up by eructation, often change the secretions of the mucous membrane.

Dr. Davis is a dyspeptic, and thinks that his teeth are not injured thereby—but is very careful to often cleanse his teeth, and in this way he may keep the acid with which he is occasionally annoyed so diluted, or frequently washed from about his teeth, as to prevent injury. He thinks, however, that his teeth were injured by the use of salt in an attack of hemorrhage of the lungs.

“What is the effect of repeated salivation on the teeth and gums?”

Dr. Somerby thinks the bones are weakened by the use of calomel; its effects, however, being most observable on the soft bones, and instanced the bones of the nose, &c., but its action is not directly observable on the teeth.

Dr. Griffith remarked that some years since, for an attack of rheumatism, he was induced to put himself through a course of salivation—this was kept up for six months, and under the treatment I grew worse, and my rheumatism terminated in a complication of diseases far worse than the original disease; during this time, however, I daily washed my teeth, and at the close of the salivation I had my teeth examined and found them still free of disease. He has been frequently solicited to take out teeth loosened by salivation, apparently ready to drop out, yet he has generally seen these teeth grow firm. In cases of salivation he directs

perfect cleanliness, for if the calomel lies in the mouth it induces exfoliation of the bones; whether this, however, is from the direct effect of the calomel, he cannot say, some other agent may be brought into action, excited by the calomel which induces the exfoliation. The calomel alone he believes will not act chemically on the bones.

The question as it regards the action of calomel on the gums was not specially discussed. This was perhaps more from the fact that there was no difference of opinion on the subject, all regarding repeated salivation as of injury to the gums, and many reporting frightful cases of the loss of teeth and alveolar processes from the injudicious use of mercurial remedies. These cases being similar to such as are almost daily seen by the profession, are not reported.

"What are the effects of tobacco on the teeth, and are those of chewing and smoking the same?"

Dr. Goddard opened the discussion on this question by remarking that in ninety cases out of a hundred tobacco will not injure the teeth—he would be understood to mean the pure Kentucky weed, free of adulteration, such as copperas, &c.

Dr. Somerby says that it preserves the teeth, and has observed its beneficial effects on roots of teeth to which artificial teeth have been attached, and the teeth inserted when natural ones have been used—that it is a powerful anti-septic and purifier of the breath. A man who chews will never have a bad breath from that cause. If he has many bad hollow teeth his breath may be offensive, but not from the use of tobacco—so if he drinks brandy he may have a miserably bad breath from the use of this article. The tobacco itself is a purifier. The juice of the tobacco allays the tenderness of the diseased dentine, and arrests, although it may not utterly prevent, decomposition of the tooth bone. Bad fillings will last longer in the mouths of tobacco chewers than others. Smoking he thinks is injurious, and is more apt to affect the breath; occasionally he has advised his patients to chew as a preservative to teeth disposed rapidly to decay. Dr. Somerby however, does not chew himself, and would wish to be reported correctly on this subject; and on this as well as all other subjects discussed, be placed on the side of the majority.

Dr. Goddard thinks that smoking is injurious, and that the teeth of moderate chewers may and often are injured by constant friction in chewing. The gums may occasionally be injured by leaving the quid of tobacco in one place too constantly; but for his part he chews all round and never leaves the tobacco at rest.

The reporter would here remark that Dr. Goddard's teeth bears good evidence of good use, good care and good constitution, but would venture to suggest that the same care and constitutional development would have insured the like result.

Dr. Ulrey says that in nine cases out of ten tobacco induces decay of the teeth—that it changes the healthy secretion of the mouth, injures and cuts away the gums, and when suffered to remain at one place in the mouth it induces absorption of the gums and alveolar processes and consequent loss of the teeth—that when used most dexteriously it may act as a scavenger, but is a filthy one, and not more effectual than a chip of pine.

Dr. Griffith thinks that tobacco may act as a preservative—that it is a good anti-septic, and in teeth disposed to be troublesome and painful it may allay the irritable condition and act beneficially.

Dr. Allen thinks it may at times, act as a preservative, but would prefer to preserve the teeth by some other means.

Other members spoke on this subject, but notes were not taken so as to enable me to report their views correctly.—(Reporter.)

“Has the tartar of the teeth a constitutional origin?”

Dr. Somerby says yes.

Dr. Allen would vote on this question with Dr. Somerby.

Drs. Hunt, McCullum, and Davis answered in the affirmative.

Dr. Griffith says yes, but sometimes local, and remarked that he had met with cases where the tartar had evidently produced caries at the neck of the teeth, and thinks that the green, so called, generally induces decay.

“Is the decay of the teeth greater in the West than in the Atlantic States, in the same latitudes, and is there any difference in different latitudes in the same meridian?”

Dr. Somerby remarked that he had not been able to notice any difference East and West, where the same care was taken, but believes that low, marshy miasmatic countries show more decay of the dental organs than mountainous and healthy countries.

Drs. Griffith and McCullum coincides with the views expressed by Dr. Somerby.

Dr. Allen remarked that history will inform us that the inhabitants of the mountain ranges are blessed with healthy, vigorous constitutions, that here the physical organization is perfected, developing firm osseous structure and hence also good teeth. That the low lands, the Pontine marshes of Rome and level miasmatic sections of our own country,

produces effeminacy of the general constitution, and the teeth partake in this deterioration.

Dr. Hunt agrees with Dr. Allen in his general views, but thinks that this effeminacy is as often the result of luxurious habits of life ; that in these sections the necessities and even luxuries of life are so easily obtained that the physical system is not so greatly taxed and not so perfectly developed.

"Is there any difference, as to soundness of teeth, between our native and foreign population?"

Dr. Goddard thinks that there is—the English and French having better teeth.

Dr. Somerby coincides with the opinion of Dr. Goddard, and thinks that the Irish also have generally good teeth.

Dr. Allen has not been able to notice much difference in the German and native population of Cincinnati. The English may have better teeth, but are more disposed to disease of the gums.

Dr. Ulrey thinks there is no difference, that the same care and attention in either will insure about the same condition of the teeth.

"Are the teeth of our colored people less subject to decay than those of white, who labor and live in a simple manner as to diet and drinks?"

Dr. Griffith has been an observer for twenty years—his practice brings him into daily opportunity of examining the teeth of the blacks, and he has observed no difference.

Dr. McCullum's practice is in Kentucky and Mississippi, and has not been able to notice any difference.

Dr. Ulrey thinks there is no difference, yet he has observed the blacks of the kitchen (the cooks) to have very bad teeth, perhaps worse than the whites.

Drs. Somerby and Goddard think there is no difference.—*Dental Register*.

EXTRACTION OF TEETH.

PRACTICAL THOUGHTS ON TOOTH-DRAWING ;

BY C. T. CUSHMAN, D. D. S.

"It must be allowed that there is not an operation in any branch of surgery more worthy of the particular consideration of the liberal-minded and scientific surgeon than the extraction of the teeth."—*Koecker*.

"The extraction of the dentes sapientiae of the under jaw is attended with more difficulty than that of any other of the teeth."—*Fox*.

"The most expert operator cannot always avoid breaking a tooth when it is brittle or

hollowed out by decay, not being then able to sustain the necessary force to extract it."
—*De Loude*.

I have for a long time believed that detailed reports of *difficult* cases of *extraction of teeth*, furnished our journals by practical dentists, would be very acceptable and *useful* to all concerned.

Reports which should particularize the age and characteristics of the patient, the situation and condition of the diseased teeth, the instruments used and methods of operating.

This operation, old as it is and more frequently required than any other in surgery, is yet often attended with unpleasant emotions both on the part of the operator and patient. Not unfrequently it is attended with mortifying *failure* and an unjust manifestation on the part of the patient or *subject*, I had better said against the operator. This too when no imputations could properly be made against his discretion, foresight or skill.

We have not yet overcome the obstacles experienced in the many years of practice of Fox, Koecker, De Loude and others. The *patriarch* Fauchard's aphorism, made nearly a century and a half ago, is still in force: "It happens every day, in taking out teeth, that we meet with difficulties which cannot be foreseen."

These difficulties and failures may result from various causes, some of which I will briefly state:

1. The breaking off or crushing of the crown, owing to the destruction of its dentine by decay, or a brittleness from a loss of its vitality.
2. The fracture of a portion of the roots, owing to their tortuous shape, the density of the surrounding alveolus, or an osseous adhesion of the roots to the alveolus.
3. Inflammation and extreme irritability of the periosteum and gums.
4. Sponginess, fungous excrescences, and bleeding of the surrounding gums.
5. Timidity and foolish behavior of the patient.

To illustrate the *first* and *last* named I will here relate

CASE 1.—A very pompous, portly, middle aged personage, of bilio-lymphatic temperament, with short, thick, dense, yellow teeth, generally sound, applied to have a superior bicuspid extracted. The crown was a mere shell, and much discolored, the pulp entirely dead. For *such* a tooth and particularly *this class* of teeth in the superior jaw, I prefer a small, simple *key* with a flat, concave, moveable bolster (padded,) and hook of ample curve. (Would for such a case prefer my own so extracted.)

I accordingly prepared my key, and after suitable preparatory scarification, carefully applied it as high up as possible, the bolster being inside. A gentle turn broke it off exactly on a line with the point of application. The man jumped up in a great rage—"Sir," said he, "you've broken my tooth; I would'nt have it done for fifty dollars; that is no instrument to extract a tooth with; you ought not to have taken that at all"—and so utterly refused to let any further attempt, or even examination be made! I am aware that he could find many professional endorsers for his last assertion; but at the same time know that the result in his case, *so far*, would have been precisely the same with the forceps; and, moreover, that *after* this result the practicability of extracting his tooth was quite as favorable as when he came to me the shell *crown* being of no avail for extracting the root.

CASE II.—A servant woman applied to have a tooth extracted which had caused her immense suffering for about *six months*. Having an inherent horror of *jaw-breaking*, and an extravagant imagination that she must suffer such martyrdom in having this *particular tooth* removed—although she had had other teeth extracted without accident—she had borne with this until actually driven, in the *desperation* of her sufferings, to the only effectual means of relief.

The tooth was the inferior dens sapientia of the left side, and stood isolated; the first and second molars having been extracted a long time previously. In consequence of the loss of support which they had afforded, this tooth stood leaning very much forward and inward. It was, nevertheless, very firmly fixed in the jaw (as this class of teeth are often found to be, to a wonderful degree) as were likewise the remainder of her teeth, she being a robust woman. The inner side of the tooth was decayed below the edge of the alveolus; the outer side was remarkably *rounded* and irregular.

Wishing and rather preferring to use the forceps for the extraction of teeth in nearly all practicable cases, I first applied the Harris' Molar Forceps—an excellent instrument for its purpose—in the hope of forcing it down on the inside, low enough at least to make a *fulcrum* of that beak which would enable me to raise and turn the tooth in that direction with the other. But a painful trial, and a *crushing* of the inner side, only confirmed my fears and convinced me of the *impossibility* of succeeding with this instrument.

I next had recourse to the *key*, which seemed likely to be the most efficient means. The bolster was wrapped, a suitable hook selected and

carefully applied to the *outer* side of the tooth, which offered ample strength for the purpose; but I could not possibly make it retain a hold on that peculiarly rounded surface, although I was aided by an assistant, so that I had both hands free to make the application. I will here observe that the tooth had not yet attained [its full altitude through the gums. Here were two trials made which really effected nothing, more than augmenting the patient's pain and fears. I merely tried to see if the hook could be applied to the *inner* side with any hope of success; the posterior part of the crown there presenting a small portion that was comparatively sound. But the well-known difficulties of applying the key so far back in the mouth soon gave me to see that this design was hopeless.

I next tried the ordinary *fang forceps*, whose beaks are slim and have a simple curve, in the hope of applying them *obliquely*, one beak resting on the hold I last had in contemplation, the other in a line opposite on the outer side. Another crushing of the softened lingual side, which produced additional pain without effecting *anything* toward its removal told the failure of *this* scheme.

I next directed my assistant, standing on her left side, to endeavor to apply the same instrument from his position, to draw back the angle of the mouth, and apply one beak nearly *behind* the tooth, the other in a line opposite. I have sometimes extracted difficult teeth by this kind of *cross application*, but nothing could be effected by this trial from the impossibility of forcing down the beak in front sufficient to obtain a hold.

The tooth stood, as I before stated, in a position leaning much forward, and was not fully developed in its growth; indeed, I have never seen another such case.

I then took my "*langue de carpe*," or elevator, and my position on the *left* side of the patient. Resting the rounded surface of the instrument upon the anterior edge of the *alveolus*, I thrust the point obliquely downwards into it, and, with a vigorous turn of the hand, I raised the tooth almost entirely out by a single movement; so far, that it was easily picked out by the forceps. The whole operation, by her own admission, caused not so much pain to the patient, as had been previously given by the repeated trials, which only resulted in failure. It was not attended with any fracture of the alveolus or unusual laceration of the gum that I could discover.

Here, at last, was the *only* way, I am satisfied, in which this tooth could have been extracted under the circumstances.

I have the handle of my elevator pierced crosswise, with two holes 5-16 of an inch in diameter, bored *obliquely*, to admit a cross-piece about three inches long. These holes intersect each other, so that the cross-piece when inserted either way stands at an angle of about sixty degrees with the shaft. This piece is to prevent the handle from slipping in the hand; and, of course, gives much greater power, a power that is frequently absolutely necessary to a prompt and effectual execution. It is made to fit the hole closely and slide out easily. I fix it in according to the direction in which I wish to turn the instrument, having the end which rests upon the joint of the index finger always nearest to the point of the instrument. But for this addition I should not have been able, in the foregoing case, to overcome the resistance of the tooth.

When extracted the roots were curved backward, and presented the most extraordinary case of *exostosis* I ever saw; they showed ample cause for the patient's intense suffering, and for the difficulty of extracting the tooth.

I am well aware that there are writers who assert confidently and without exceptions, that the *forceps* are the *only* instruments proper and efficient for extracting *all* teeth and roots, and that with these in the hands of a *competent* operator success is "*always*" certain.

If this proposition is incontrovertible and *infallible*, then there is certainly a lamentable want of competency, not only among the dental profession generally, but including the medical as well as all *amateurs* who essay in the operation in question.

As a recent author very justly observes:* "*Surely either extraction must be performed when the tooth might be saved by stopping, or the operators must be very fortunate in their patients, or else they must each have large cabinets of broken teeth.*"

And if these writers are able to *demonstrate*, practically, the correctness of their assertions, I can truly say I would like to *see them do it*. I would be highly gratified as well as relieved to have them assume entirely that portion of my own office practice which is furnished by our *negro population*—a race whose violations of hygienic laws are lamentably exhibited in the soft structure and dilapidated condition of their teeth—who will seldom consent to the extraction of a tooth, until its crown is mostly destroyed, its roots softened, and its pulp and membranes have repeatedly passed through the successive stages of inflammation, resolution and suppuration, and have got to that condition in

* Surg. Mech. and Med. Treat. of the Teeth, page 139.

which they are no longer tolerable to the *touch*, say nothing of *feeling*. Until I can witness such demonstrations on such subjects, I must be permitted to doubt. Until I shall see one promptly remove firmly articulated fangs, which are only surmounted by the softened shell of a crown reduced to a mere *rim*, and whose membranes are inflamed to that degree that the contact of an instrument is like striking a dagger to the heart, I must doubt. Until I see them extract such teeth, when the surrounding gums are turgid and fungous with inflammation, and pour a deluge of blood upon the field of attack, and the patient objects to more than *three* trials, I must doubt. Until such challengers shall exhibit to me their *infallible* triumphs in these cases, I shall not hesitate to say that in many such which I have seen, to extract a tooth with *any* instrument, is not only a practical but a physical *impossibility*; I mean of course the patient to be regarded as a *living*, organized being. If he were simply a wooden statute I doubt not but success would crown every individual effort. Under what other metamorphose could we think of adopting the method proposed, to make a "crucial incision" in the gum as nearly as possible to the apex of the root, dissect the gum from the bone, which cut away with the point of a "strong knife," till an opening be made into the alveolar cavity and the apex is exposed, then introduce an elevator and force it out.

Although this is recommended in some such cases as I have instanced, by that high authority, Mr. Bell, who can contemplate it with feelings of toleration? Who is willing to adopt, or to *have* adopted, the plan of M. Begin, to apply a sharp-pointed hook, attached to a turn-key, directly *on the gum*, high upon the root and opposite its centre.*

Talk not of "improved instruments" effecting easy triumphs in *every* case. The inventor of a *double claw* for the turnkey, regarded and claimed consideration for it as a great improvement;† and the various "attachments" and modifications of the primitive instruments for this operation alone would and do form a perfect *museum* in almost every cutler's shop.

But practical experience shows that the more *simple* the instrument the better it is for this purpose. My own *boutique* is somewhat extensive and embraces the approved instruments for the operation under consideration. And yet there are not a few aching teeth and "snags" which come to me in the course of a year that I cannot remove wholly,

* Vide Desirabode's "Complete Elements," p. 304.

† "Dental Practice," p. 71.

with all *reasonable* endeavors on my part, and an equal amount of fortitude and patience on that of their possessors.

Some four years ago a young man came to me at midnight, in great agony, caused by the first inferior molar on the right side. *Several times* did I exert as much of my bodily strength upon that tooth, with the *forceps*, as I dared to do; and without *loosening* it one atom as I could perceive. I then quit.* The tooth gradually got easy, though its nervous connection could not have been broken, and I believe it is yet standing where it *grew*. This was an uncommon case, but not my only one of the kind.

Many such teeth as have decayed away or been broken off I see again six months or a year afterward; when, from the more favorable circumstances, viz., freedom from *inflammation*, the shrinking of the gums, which leaves the roots more exposed to view, and from their having become somewhat detached and elevated by the natural process, I am enabled to remove them with but little trouble or pain. What is the sense, for instance, of proposing the *screw* or any modification of it for a root whose periosteum is in that state of irritability that the slightest pressure on it causes *excruciating* pain? Is there a subject who could *live* under the operation of drilling out such a fang and the application of the instrument? If so they would undergo one of the longest and most painful operations in all surgery.

I hope it will not be forgotten that I have been considering *extraordinary* cases of extraction, such as I desire to see practically treated of by writers more in detail. The operation with me *generally*, I have reason to believe, is as expeditious and *easy* with myself and patient as in the practice of others. In my confession of fallibility I must include many operators whose practice and admissions are known to me. But if I have confessed *too much* when I say for myself and profession that we do not, *cannot* at one visit get out entire *all* aching and diseased teeth which come to us for extraction, I trust its no libel in any other sense than the *legal* one, "the greater the truth," &c. And if I am altogether "behind the age" in this particular "line," and you can "show me the man" that *never* fails in *any case*, with the *forceps*, I would be glad to sit at his feet, as did Paul at Gamaliel's, and learn.—*Dental Register*.

October, 1st, 1851.

* I have an anomalous, pathological (presented) specimen of an *extracted* tooth, which serves me as a perpetual monitor against the exercise of *unlimited* physical force in this operation.

LETTER FROM DR. J. ALLEN.

To the Editors of the Dental Recorder :

GENTLEMEN :—As you have kindly offered me an opportunity to reply through the medium of the Recorder, to Dr. Hunter's strictures upon me, I deem it proper to do so, not that I wish to indulge in sarcasm, or malign the character of any one, for that is not my ambition ; but simply to defend myself from the malicious attacks that have been made upon me by designing persons, for the purpose of misleading the public mind, wresting from me my invention, and appropriating it to their own use.

But, as the dental profession will derive no benefit from personal altercations, I wish to dwell more particularly upon the fundamental principles which serve as a basis for my improvement in artificial gums. With reference to recipes for enamels, I know of none that possess the requisite properties for uniting mineral teeth and metallic plates to each other, in such a manner as to form continuous gums, upon artificial dentures, without either cracking, scaling, or warping the plates upon which they are flowed, unless both sides are covered, which is found to be inadmissible for dental purposes. These are important principles, which must be observed, in order to form a continuous gum without encountering the difficulties above named, as the various efforts which have been made to attain this end, and have always proved abortive, clearly shows. In the first place, there should be a strong chemical affinity between the component parts of the compound, the teeth, and the plate upon which it is to be fused, in order that a perfect union of the whole should be formed. Among the various metals with which we are most familiar, we find that the linear dilatation of platinum by heat, when raised to 212°, according to Borda, is 1 part in 1167, which is the least of any of the metals. Palladium, according to Wollaston, 1 in 1000, Antimony, 1 in 123 ; Cast Iron Bar, 1 in 901 ; Steel Bar, 1 in 862 ; Wrought Iron, 1 in 819 ; Bismuth, 1 in 718 ; Gold, 1 in 713 ; Copper, 1 in 584 ; Brass, 1 in 548 ; Silver, 1 in 505 ; Tin, 1 in 438 ; Lead, 1 in 345 ; Zinc, 1 in 339.

Among the minerals we find that the same degree of temperature will produce a linear expansion. Marble, from St. Beat, 1 in 2391 ; Stone from St. Pernon, 1 in 2304 ; Stone from St. Leu, 1 in 1541. The clay which is obtained in Dorsetshire and Devonshire, 1 in 2123. In Wedgewood's wares, a large proportion of this material is used. Cornish stone, 1 in 1521 ; English flint glass, 1 in 1248 ; French plate, 1

in 1147; Sulphate of Barytes, 1 in 1204; Sulphate of Strontites, 1 in 1128; Asbestos, 1 in 1769; pure Silix, 1 in 1662.

From the metals above named, I select platina as the most suitable for plates for my new style of work, because the linear dilatation and contraction of this metal when exposed to extreme temperature of heat and cold, is less than in any other metal. The mineral compound to be employed in forming a continuous gum upon artificial dentures, should possess the same degree of resisting power as the plate upon which it is to be fused, otherwise the contractility of the mineral in cooling after fusion, (if greater than that of the plate) would either cause a cracking of the cement, or warping of the plate, which in either case would be highly detrimental. The same result would follow if the linear expansion, or contraction of the metal plate was greater or less than that of the mineral. Hence the importance of having the same degree of dilatation and contractility in the metal, and the mineral. Therefore if substances be used as fluxes, etc., for uniting the minerals which contract much, other substances more refractory in their nature should be added to the compound, such for instance as Strontia, Devonshire clay, or Wedgewood, Asbestos or stone from St. Pernon or Leu. These substances, duly proportioned and properly prepared may be employed to great advantage in my silicious compound, which I employ in the construction of continuous artificial gums, as exemplified in my new style of work.

As to the recipes recently given by Dr. Hunter, he states that they will make a stronger piece of work than any other enamel that he knows of, and yet from his description he considers them worthless for dental purposes. But he says, "to those desirous of trying the experiments, I give the following formulas: take silix, etc., if it is not desired to take the trouble to manufacture the material for the base it can be avoided by using the English pot enamel, he referred to in a former recipe." If these are his recipes that he promised, it is evident his object is not to benefit but to mislead the profession with regard to my invention. Is this praiseworthy? Will the profession approve of that policy which seeks to injure a competitor. Again, he states he has given a better article than mine. How can that be possible, when he knew nothing of my compound—it is quite certain that after my invention was perfected and brought out—he was continually experimenting, striving to accomplish the same result, but like unto those men of France, whose names he quotes, his success appears to have been the same, for he distinctly states he can pick to pieces any teeth put up in

that manner, with his fingers, which of course proves his own experience, and his failure. Again, as soon as my patent was granted, he sent for my specifications, for what purpose will be seen hereafter. He also mentions a preparation of plaster and asbestos, which information I have no doubt he obtained from Mr. Steemer, they being close colleagues. It is a preparation I claim as my own, a knowledge of which Steemer obtained at my laboratory, while he was in my employ last summer. Dr. Hunter also says he does not claim the improvement that consists in sticking teeth to the plate, which was known in France long before I ever thought of dentistry. But how was this *sticking* done—by the use of enamels, which always have, and ever will fail when employed for such purposes. Now, Dr. H. must stand by his own words. He says his improvement does not consist in this. Of what then does it consist? of block work, soldered on in the usual manner. Why then is he fighting me. Because he knows that my invention will supercede all block work, as a number of eminent block manufacturers can testify, who have adopted my mode, and consider it superior to any other. Again, he says he did not make public announcement in the early stages of his experiments, thinking it time enough when perfected. So I thought in the early stages of my experiments, specimens of which Dr. Hunter will recollect were on exhibition at the fair of the Ohio Mechanics Institute, in 1844; if he does not, the committee, which consisted of Drs. Rogers, Curtis, Taylor, and Warder, distinctly will, for I had then full and partial sets of teeth mounted on gold plates, with continuous artificial gums flowed in and upon the teeth and plates, for which work I obtained a premium. My experiments have been continued from that time until I arrived at a sufficient degree of perfection to justify me in adopting it in my practice, which has been some two years since, as shown by those who know the facts, although Mr. Steemer dates it to the past summer, when he first saw it in my laboratory.

There are several other points alluded to in Dr. Hunter's article, such for instance, as an expose by Dr. Leslie, before the society at Louisville, and a private offer to pay for a Gold Medal, etc., which are so preposterous as hardly to require notice.

An expose, when the whole Society, with the exception of Dr. Leslie, voted me the highest testimonials it was in their power to bestow. In conclusion, I would only state, that the combined efforts of Steemer & Co. to wrest from me my invention, by means of falsehood and calumny, have proved a most signal failure, and Dr. Hunter's efforts to

make capital out of them will prove equally so, for Truth is mighty, and will prevail.*

Respectfully yours,

J. ALLEN.

DR. JOHN ALLEN'S IMPROVEMENT.

To the Editors of the "Dental Recorder":

GENTLEMEN.—The undersigned, Professors and students of the Ohio College of Dental Surgery, having read an article in the December number of your Journal, headed, "A new method of constructing Artificial gums," beg leave to make a few statements in order to disabuse the minds of the dental profession, as well as the public, of any wrong impressions that may have been made by the article above named.

While making these statements we wish it to be distinctly understood, that we have no desire to depreciate the discoveries made by the author of that paper, but we wish to give *Genius* in all instances the reward that its merits deserve.

In the composition of that article the author seems to have had two prominent objects in view.

1st. To show that he is possessed of the secret of Dr. Allen's method of forming artificial gums; and in proof he presents a number of formulas that he says produced the same if not better results than those of Dr. Allen.

To this we would simply state, that we have examined the formulas of Dr. Allen, and find them to be entirely different from any composition named in that article, and that his composition possesses the property of adhering to metallic plates, and to artificial teeth, with a force that it is impossible for any simple "enamel" or even silicious compound to acquire.

2nd. The gentleman labors hard to show that the invention of Dr. Allen is worthless, for want of "strength to resist the powerful action of the organs of mastication," and he promises to break the teeth from any plate to which they may be united, with enamel alone, simply by the aid of his fingers.

Now we will not doubt that he can break with his fingers, *any material of his own composition* from the plates to which they may be united; but from our own examination and experience, with the work of Dr. Allen, we are confident he would fail to fulfil his promises, unless he is possessed of the strength of Hercules.

* For a refutation of the charges see pages six and seven of advertising sheet.

To give an idea of the unyielding nature of Dr. Allen's cement, we will relate one of the many test experiments made in our presence in the college laboratory by Dr. Allen.

He took a strip of platina plate, of the usual thickness and just wide enough to give bearing on its end to two common sized incisor teeth, and about two inches in length. One end of this was turned up so as to represent the rim of a plate for the teeth. He then set on this two incisor teeth made (expressly for the purpose of testing the cement,) without platina pins, backings, holes, or rough surfaces for the cement to cling to, and surrounded them with his composition, which was then fused in a muffle.

When it was cooled it was passed round, with the request that we would pull off the teeth with our fingers. It was first tried by holding the platina strip in one hand, and drawing at the teeth with the other, but no one of us was able to effect them in the least in this way.

It was then passed round with a pair of strong pliers to hold the plate, with the request that we would break them off if possible with that advantage. It passed round uninjured by this test.

It was next passed round with the pliers as before, with the addition of a piece of paper folded over the teeth, so that we might exert our utmost strength on them without hurting the fingers, when it resisted the trials of nearly all present, but at length one of the teeth was broken in two by the force applied, *leaving the cement and that part of the tooth embraced by it still undisturbed on the plate.*

In conclusion, we would state, that we are fully convinced that Dr. Allen is the sole inventor or discoverer of his method of forming artificial gums, and that it is not only practical, but highly ornamental and useful in the mouth, and that it can only be excelled in strength and durability by the best of natural teeth. As to its capability of resisting the actions of the powerful organs of mastication, (from what we have seen) we do not believe that they would be broken by any effort of the jaws, *short of cracking hickory nuts in the mouth, or of biting in two ten-penny nails.*

Signed.

Thos. Wood, M. D., *Prof. Anatomy, &c.*

G. S. Van Ernon, *Demonstrator,*

Geo. Mendenhall, M. D., *Prof. of Pathology and Therapeutics,*

Jas. Taylor, M. D., D. D. S., *Prof. of Principles and Practice of Dental Surgery,*

Nimrod Hull, Bainbridge, Ohio,

Isaac A. Herring, Kosciusko, Miss.

Y. K. Brewster, Belibrook, Ohio,

M. N. Manlove, Lafayette, Ind.
W. C. Duncan, Cincinnati, Ohio.
N. P. Allen, Bowlinggreen, Ky.
J. H. Olds, Circleville, Ohio.
G. L. Paine, Xenia, "
J. C. Whinery, Salem, "
W. S. Jones, Jr., Russellville, Alabama.
John H. Williams, Pittsburgh, Pa.
James T. Irwin, Cincinnati, Ohio.
A. L. Duyers, Greenfield, "

P. S. The above communication was written and signed, without Dr. Allen's solicitation, as a voluntary tribute from his colleagues and students.

T. Wood.

THE TREATMENT OF ALVEOLAR ABSCESS.

Until quite recently, we have never met with any success in the treatment of this disease that seemed at all compatible with the retention and usefulness of the tooth affected. And we had pretty much concluded that to save a tooth, where ulceration had taken place at the root, was absolutely impossible.

And hence, we have been as contented as we could, in merely palliating urgent symptoms, or in removing at once the tooth whose diseased fang was the source of difficulty. But, within a short time past, we have fallen upon a plan of treatment that has succeeded so well in our hands, as to induce us to mention it to the profession, in hopes that others may derive the same advantage that we have from its adoption.

An example or two will serve to explain our mode of treatment.

About a year since we were requested to fill a tooth for a young gentleman, the first left inferior molaris, that was much decayed upon the posterior portion of the crown, and extending down into the upper portion of the fang. But the posterior branch of the dental pulp being dead, no pain was experienced in the operation of filling. In a few days, however, the tooth gave signs of uneasiness, and subsequently becoming quite sore and painful, we were requested to extract it. But, as it was an important tooth for purposes of mastication, and the only large molar left upon that side, it was thought best to postpone the extraction until further effort had been made to remedy the difficulty. Meantime the stopping (Hill's) was removed with a view of allowing the accumulated matter to discharge through the cavity. But as the pain and soreness continued, the cavity was again filled with Hill's stopping, and the gum freely scarified.

Notwithstanding these efforts, a considerable tumor formed at the root of the posterior fang, and the soreness continuing, we were again pressed to remove the tooth, but contented the patient by removing the filling, thinking it worth our while to make still another effort to save the tooth. The tumor was again freely lanced, and the tooth soon after refilled, as before.

We now commenced touching the tumor with nitrate of silver, with decided advantage, the discharge gradually ceasing, and the tumor diminishing, until there is now scarce anything to be seen of the former disease. Meantime the soreness and pain has wholly subsided, and the tooth is now restored to *complete* usefulness in mastication.

Case No. 2.—Mr. H., a young gentleman who for some year or two past has been subject to very sudden attacks of convulsion from cerebral disease, called upon us, with the right superior central incisor hanging very loosely in its socket, having settled below its fellow nearly the eighth of an inch. Suppuration had already taken place, and matter was freely oozing from beneath the borders of the gum, and that quite profusely. On inquiry we ascertained that the injury had been induced while in a state of convulsion, by his mother's attempting to introduce a billet of wood between his teeth, to prevent his biting his tongue.

Our first efforts in this case were directed toward restoring the tooth to its natural position, and retaining it by ligature. The suppuration was profuse, and for some days it seemed doubtful whether the tooth could be retained.

At this stage we concluded to try the effect of nitrate of silver, which we used as follows :

An incision was made through the gum over the apex of the fang, and the parts syringed with pure water. We then took a small crystal of the nitrate of silver, and held it firmly between the points of a pair of tweezers, and introduced it directly through the incision into the gum, until the parts were sufficiently cauterized. We then directed him to rinse his mouth with water, and call upon us the next day. When we saw him again, a new action had taken place—the suppuration had nearly ceased ; the parts were becoming more firm, and every indication seemed favorable. At intervals of a few days, we continued to lance the gum as at the first, and apply the caustic in a similar way. And we now have the satisfaction to state that the tooth has become firm again in its socket, and scarce a vestige of disease remained when we last applied the caustic, which was some days ago.

Case 3rd.—Now in hand, is that of an Irish laborer, who came to us

a few weeks since, with a large abscess over the left superior lateral incisor and cuspid tooth—or rather where the cuspid tooth once was. It had been extracted a short time previous by a physician in the upper part of the county, and an extensive abscess had been formed in the socket, extending to the central incisor. The lateral incisor was very loose, and matter was freely discharging around the festooned border of the gum. We introduced a lance through the gum, over the fang, which was immediately followed by a profuse discharge of foetid matter. We then dismissed the patient, requesting him to call again the next day.

The next time he came we found the matter discharging as before, with much pain and considerable swelling. We then opened the socket, where the cuspid tooth had been extracted, and injected some water, which escaped very easily from the incision which was previously made over the incisor tooth. We then made a strong solution of the crystal nitrate (say 2 grs. to the $\frac{1}{2}$ oz. of water,) and injected into the abscess. This has been once or twice repeated with the most decidedly happy effects, and to day the patient gives indications of a speedy and complete recovery without removing the other tooth, which had evidently been injured in the attempt to extract its nearest neighbor.

We should observe that much care is necessary in the use of nitrate of silver, lest the teeth should be injured by coming in contact with it.

We think the crystal nitrate decidedly preferable to the other form in which it is generally used.

We hope some of our professional brethren, who know of nothing better, will try the plan here suggested, and report their results to the profession. Or, if they have a better plan of treatment, will report the same.

We are well aware that this remedy has been successfully resorted to for another class of diseases, but we are not at present informed if it has been used in the way and for the purposes herein set forth.—*Norwalk Ed.*

MANNER OF FITTING CLASPS.

Pulaski, Jan'y. 20, 1852.

DR. C. C. ALLEN.—Dear Sir: In the November number of the "Dental Recorder," you state your plan of fitting clasps at the same time suggest to those having a "better way," to communicate the same to you. I will not say that my plan is better than yours; but that it

is *different*, and if *you* think it preferable you can use it as you see fit.

In the first place, I fit the plate to the gums and teeth as accurately as possible, leaving a space between the plate and teeth for the clasps, which, after removing the plate, I fit perfectly to the teeth, then replacing the plate I file away if necessary any place that may press too closely upon the clasps.

After all is perfectly arranged, I press with my left hand gently upon the plate, bringing at the same time the clasps into their proper position, then with a sharp pointed instrument (say an excavator) in my right hand, make a line on the clasps directly around where the plate comes in contact with it. I then make two lines on the plate, passing them on to the clasps across those that I had previously made.

When the plate and clasps are properly adjusted, I remove them, and with a piece of tie wire fasten them to the plaster mould, taking care that those lines come precisely as they did in the mouth.

The plate is now ready for soldering.

Truly yours,

W. W. ALLPORT.

WELDING PLATINA SCRAPS.

Cincinnati, Feb'y. 7th, 1852.

MESSRS. EDITORS:—Permit me, through the medium of the Recorder, to describe an easy method by means of which platina scraps and filings may be united and formed into plates.

Take fine gold rolled into thin sheets, (or foil) place the scraps and filings upon one, and cover with another sheet of gold, roll them closely together, without borax or flux of any kind, then put them in a crucible or (that which I prefer) upon a slide in a muffle, and subject it to a sufficient degree of heat to melt the gold, which will unite the scraps. Then, with a hammer, the roll can be beat into a solid piece. If there should be flaws, or disunited portions, envelop it in gold, and again melt, withdraw it from the fire, hammer, and roll it into plate, which, prepared in this way, I find as tough and ductile as the best platina or gold, and susceptible of a more beautiful finish. I send you a small piece prepared in this way, hammered out, one-seventh part of which is gold. Respectfully yours,

J. ALLEN.

The specimen alluded to appears to be perfectly free from cracks or flaws, and as tough as any platina that we have ever seen, while its color approximates that of gold. Platina is susceptible of being welded

like iron, at a white heat, but the great practical difficulty consists in holding the scraps and filings together when heated. The usual plan has been to pack it, in the form of platinum sponge, into an iron ring, and when heated to a white heat condense it by hammering upon a follower fitted to the ring. When the parts are once united, the mass may be heated and worked like iron, or rolled in a mill like gold and silver. The above plan combines both soldering and welding, and must prove very useful to those who wish to employ platina instead of gold in their work.—*Ed. Rec.*

DARLING vs. HUNTER.

There seems to be quite a controversy now going on between some of our friends in Cincinnati, respecting the relative merits of the two different methods of constructing "continuous gums," the priority of invention, &c. Since the publication of Dr. Hunter's article in the December number of the Recorder, we have received several communications from Cincinnati, upon both sides of the questions at issue. All that was of general interest to the profession we have given to our readers; but such as is only of a personal character, we must be excused from publishing, except as advertisements, as we do not wish to take any part in the controversy: but it will often happen in advertising controversies, that third parties are brought in, and, as they think, misrepresented, without the editors being responsible for it. To allow the third party to reply would encroach too much upon our limits, and fill the pages of the Recorder with matter of no interest except to the injured party, while to refuse a correction would be doing injustice.

In accordance with these views, we feel bound to furnish the following explanation from Dr. E. G. Darling. 1st. He denies ever having given to Mr. Steemer "a certificate *recommending* his article," (enamel) as intimated in Dr. Hunter's communication, but says the certificate alluded to "was a simple statement that Steemer had communicated to me certain information respecting a kind of enamel," &c. He declares farther, that, "the *recommending* item is not in it." 2nd. In reference to the specimens which Dr. Hunter says he had exhibited, and Darling had seen and declared to be "the best work he had ever seen in his life time," Dr. Darling now says "I have only to say, not only that I never saw them but consequently that I never made the declarations respecting them ascribed to me by Dr. H." If this be true Dr. Hunter has probably been misinformed. We have given the above by request of Dr. Darling.

NEW YORK DENTAL RECORDER.

Devoted to the Theory and Practice of
SURGICAL, MEDICAL, AND MECHANICAL DENTISTRY.

Vol. VI.

MARCH, 1852.

No. VI.

MUCOUS MEMBRANE OF THE MOUTH.

BY PROFESSOR W. R. HANDY, M. D.

If there be one tissue of the body of higher relative importance to the practical dentist, than that of any other, it most assuredly must be that of the mucous membrane of the mouth. For, with this membrane is associated every thing of interest and utility connected with his profession. And by its relations with the rest of the tissues, comprehends both the *science* and the *art* of dentistry—the *science*, in demanding as an essential prerequisite, that it shall be studied, and thoroughly studied, in its anatomy, physiology, and pathology, as being the membrane which gives existence to the teeth, forms the foundation of their structure, and involves their several functions and diseases. And in the art, which simply embodies the proper application of this knowledge, in all the practical details relating to the proper management of the teeth.

“I cannot forbear,” says Mr. Nasmyth, “from endeavoring to impress upon the minds of my readers, that such a knowledge forms the basis of sound surgical practice, and that without it, the surgeon would be incompetent to perform the most simple operations upon the teeth, with a proper regard for the safety of his patient. The physiology of the teeth teaches us the cause of their shape and arrangement, their admirable adaptation to the office which they fulfill, and the manner in which their function is effected.

The mucous membrane further forms one of the two great divisions of the germinal membrane, the other, being the serous, whose combination, we are told, constitutes the human being in its earliest period of existence—the mucous division forms the minor portion, from whence spring all the organs of nutrition, and belong, in the language of Bichat, to organic or vegetable life, while the outer, or serous portion, forming the organs of locomotion, speech and sense, constitute animal life.

The mucous membrane, in the department of semeiology, furnishes one of the most important keys to unlocking the general condition of the system, as well as reporting every special departure in its own composition, whether that departure be in the color and density of its struc-

ture, or in the quality of the fluids of its function, thus furnishing, as it were, a kind of measurement, of the reciprocal influence exerted by this membrane and the system at large, and thereby enabling the dentist to give a practical value to such information, so practical as to tell him the time *when* he should operate, and so valuable as to make him avoid causing any unnecessary suffering to his patient, if no operation be demanded.

This membrane is also the great seat and recipient in the application of foreign agencies to the body, whether these agencies relate to its nutrition on the one hand, in supplying the various materials of nourishment, or to its medication on the other, in being the medium through which is most generally introduced the different articles of the *materia medica*.

The mucous membrane in its full development in the teeth, is further turned to practical account by Mr. Sanders, in showing that their successive appearance is a more trustworthy test of *age*, than that of height, or even the testimony of parents, where their cupidity tempts them to sacrifice the health of their children and the truth, by putting them to work in the factories at an age too young—entirely unsuited to their physical strength, as well as in direct violation of law.

This membrane, also, as represented in the teeth, whose variety of structure the microscope has established, as existing in the various classes of animals, is thought to furnish the most natural foundation for a correct classification of the animal kingdom. And still further to indicate, agreeably to Mr. Nasmyth, “the progressive improvement of the human race.” And, lastly, the multitude of diseases to which this membrane is subject, viz. schirrus, cancer, polypus; serous, mucous and bloody fluxes, with inflammation in all its varieties, &c., &c., render it a tissue of extreme interest.

Such are some of the considerations as bearing upon the *importance* of the mucous membrane, which we now propose to examine somewhat in detail, though in as brief a compass as possible, and as having a more especial reference to practical points in which the dentist as well as physician, is mainly concerned.

Mucous Membrane, (so called from the character of its secretions,) it is well known, chiefly occupies the interior of the body, and lines the whole of the alimentary canal, from the mouth to the anus, with the various glandular ducts which pour their fluids into it, also the respiratory canal, and the canals of the urinary and genital systems both of the male and female. It consequently enters as one of the fundamental

elements in the great functions of digestion, respiration, urination and generation. It is also styled the *internal skin*, or tegument of the body, in contradistinction to the skin proper, or external tegument, which title seems to be fully justified, both by the continuity, as well as similarity of structure in the two divisions. At all the great outlets of the body, as those of the mouth, nose, anus, vagina, &c., &c., the mucus is traced as a continuous tissue with that of the skin, and further, the identity of the two is observed by the one being readily convertible into the other, as seen in prolapsus of the vagina and rectum, where the mucus, by being exposed to the air, becomes changed into skin, and the skin, as in the axilla and between the nates by being kept moist and deprived of air, (as sometimes occurs in children, where cleanliness has not been observed,) assumes the character of mucous membrane. And as to similarity of structure, this will be noticed more particularly presently.

The comparative *extent* of the skin and mucous membrane, may be readily conceded in favor of the latter, when we consider for a moment its two great primary divisions, and but briefly follow the extent of surface which each covers. These divisions consist of the *gastro-pulmonary*, and *genito-urinary*—the former comprising the mucous membrane lining the mouth, pharynx, œsophagus, stomach, and intestines, with all their glandular ducts constituting the digestive apparatus, with that of the nose, larynx, trachea, and bronchia, ramifying in the lungs—forming the respiratory, while the latter extends from the kidneys, lining the uterus, bladder, and urethra, including the organs of urination with the vagina, uterus, and fallopian tubes of the female, and the several organs of the male, embracing those of generation.

Mucous membrane every where, presents the common character of a soft tissue, readily yielding to mechanical violence, easily destroyed by the action of chemical agents, and undergoing, with facility, the process of putrefaction.

The *thickness, consistency, color and adhesiveness* of this membrane, varies at different points of its course, though all compatible with health, and in perfect harmony with the function which each separate part has to perform. As for instance, the thickness is found to be much greater in the alimentary canal than in the urinary and genital organs, and greater in the duodenum, stomach, and rectum, than in any other part of the intestinal tube. The consistency equally varies, being greater at the pyloric than cardiac extremity of the stomach, greater in the lower portion of the jejunum and ileum, than in the stomach or duodenum, and

much greater in the gums than either the lips, palate or cheeks. The color, if any thing, presents even a still greater diversity, for here the variation is not confined to the different parts of the mucous membrane, but the same part may also exhibit a difference of color, according to activity of function, and yet be in a state of health, as in the stomach, during digestion, the color is of a brighter red, than when this function is not going on, and is entirely due to the cause of the presence of a much larger quantity of blood, with greater activity of the circulation, than in the quiescent state, and yet both conditions healthy.

Age causes great variation of color. In the fetus it is seen of a deep red color; in the adult, much paler, and in old age presenting rather an ashy or grayish hue—in fact, the color seeming to be deep, or otherwise, according to the arterial development. Disease, the kind of death, and various substances introduced into the stomach, change, in greater or less degree, the color of the mucous membrane.

In acute disease, the color will be much deeper, than in chronic, where it will assume rather a palish aspect, from the poverty as well as diminution of blood. In sudden and violent death, as hanging, drowning, &c., the color is seen of a deep red; and substances such as nitrate of silver, logwood, lavender, &c., can each alter the color from its natural state; facts, all of which are highly interesting in a medico-legal point of view. In *structure*, the mucous membrane, though presenting peculiarities at different points, has, nevertheless, some characters which are common to the whole. This membrane is now generally admitted, by anatomists, to consist of three elements, viz., an epithelium, a basement, primary or papillary membrane, and an areolar tissue, containing the blood vessels and nerves.

The epithelium forms the outer layer, and is to the mucous membrane what the cuticle or epidermis is to the skin. It was thought, at one period, to be so partial, as only lining the mouth and œsophagus as far as the cardiac orifice of the stomach, but by the microscope, the epithelium is now satisfactorily traced throughout the whole of the alimentary tube.

It is found to be composed of cells, which, like the cuticle, are susceptible of rapid formation and of as rapid destruction, and consequently obeying the law of constant loss and renewal. These cells, though varying in their form in different parts, nevertheless perform the common office of protecting the mucous membrane from the contact of foreign bodies, whether dietetic or medicinal, and furnishing a smooth

surface by the presence of the mucus, for the ready passage of alimentary material, and the various fluids of the several excretory ducts, without which provision, it does not seem hazarding too much to say, that for all the great practical purposes of health and life, the mucous membrane would not only be crippled, but wholly inoperative. The cells of the epithelium are arranged under three forms, viz. 1. The *tesselated*, or *pavement* epithelium. 2. The *cylindrical* or *conical*. and 3. The *ciliated*.

The first variety is described as having its cells of various size, flattened, and either oval, roundish or polygonal, and are seen either in one layer or in many layers, placed one above the other. Each cell contains a central nucleus and nucleus corpuscle. This variety is found in the mouth, pharynx, œsophagus, blood and lymph vessels, and the cuticle likewise, is said to present the same plan of arrangement. The second variety is found to line the whole alimentary tube, from the cardiac orifice of the stomach to the anus—the principal gland ducts—the female urinary, and the male genito-urinary apparatus. Its cells, the microscope informs us, are of a cylindrical, columnar, or pyramidal shape, having their apices resting upon the basement membrane, while their bases approximating form the free surface. The cylindrical cells are seen to be closely arranged, side by side; containing, also, in each, a central nucleus and nucleolus. The third variety differ from the second, simply in having the free extremity of its cylinders presenting little processes, termed cilia, and are found upon the mucous respiratory tract—the female organs of generation commencing at the neck of the uterus, and are also seen in the ventricles of the brain. These cilia are represented as in constant vibratory motion, and having their direction towards the outlets of the various canals they line, and designed, it is thought, to favor the motion of the fluids of their natural course, as for example, in the case of catarrh, to conduct the expectoration towards the outlets of the nostrils and mouth.*

* To Mr. Nasmyth the profession is much indebted for correct knowledge in reference to the structure of the epithelium. In his late microscopic researches, the scales of Leewenhoeck, or the squamous epithelium, as applied to the cuticle, as well as that lining the mouth, he describes as presenting four successive stages of development, viz., "1st. The promotion of nuclei and corpuscles. 2nd. That of cells. 3rd. The growth of the latter effected by vital imbibition, and 4th. Their compression and gradual conversion into minute lamellar or scales." And that these scales have spaces between them, being connected by a "translucent, gelatinous substance," which he states as having considerable "elasticity," and that the fluid secreted upon the surface of the vascular corium, contains the nuclei and corpuscles, from whence the scales, being the highest stage of development, originate.

The *second layer of the mucous membrane* is compared to the rete mucosum of the skin, and is regarded as the formation membrane of the epithelium, beneath which it is situated, and is called the *primary or basement* membrane. This membrane is structureless, and is considered by Mr. Carpenter, as forming an exception to the doctrine of Schwan, which makes all the tissues to have their origin from cells—he regarding its formation rather from “a layer of the plastic element.”

The *third layer of the mucous membrane* resembles the corium of the skin, though it is not so thick. It consists of areolar tissue, containing white and yellow fibres, also the blood vessels, and nerves, and gives to the mucous membrane its proper support and strength. A fourth element belonging to mucous membrane, consists of glands. These are found scattered throughout the whole mucous tissue of the alimentary tube, and are estimated by Dr. Horner to be upwards of forty-six millions. They are divided into three classes, viz. the follicles of Lieberkuhn, the glands of Brunner, and those of Peyer. The follicles are regarded as simple depressions in the mucous membrane, from whence the mucus is supposed to be furnished. But Dr. Horner regards these follicles of Lieberkuhn, as nothing more than the “meshes” in the veins, which his anatomical preparations present as cribriform in their appearance, and giving the follicular aspect, and whose use he suggests as being rather designed for absorption than secretion.

The glands of Brunner are mostly found in the duodenum, and are seen to surround the intestine, in the form of a layer of white bodies, about the size of a hemp seed. They resemble the salivary glands, in consisting of lobules, having excretory ducts, which open into a common tube.

The glands of Peyer are found at the lower portion of the ileum, and are either collected in clusters, called (*agminatæ*), or exist alone, and are termed (*solitariæ*.) The peculiarity of these glands consists in their having no excretory ducts, though they are found to contain mucus, and small vesicles or cells. They are seen to present themselves in circular or elliptical patches, with a slightly raised surface, and from being closed, their precise use still remains a problem.

The *common function* of mucous membrane, like the skin, consists in sensation, secretion, absorption, and in its capacity of self-protection from the action of external bodies. Its sensation, compared with the skin, is dull—its secretion and absorption are much more active, while

its protective powers are remarkably great and astonishing, and are derived principally from the presence of a fluid, found every where belonging to this membrane, and called *mucus*. This fluid varies in its composition, as it is obtained from different points of the mucous surface, and in consequence of being mixed with as many other different fluids, its true character is consequently difficult to be arrived at. It is regarded, however, as a viscid fluid, "either colorless or slight yellow, transparent, or nearly so, incapable of mixing with water, and sinking in it." Its peculiar principle is termed *mucin*, which is made to consist of albumen, and, according to the analysis of Berzelius, besides a large quantity of water, contains the muriates of potassa and soda; lactate of soda, with animal matter, soda, albumen and animal matter, and phosphate of soda. In health this fluid is regarded as generally *alkaline*, though in disease often acid. Under the microscope it is found to contain epithelium scales, and granular corpuscles. Such is the nature of this fluid, destined to protect the general mucous surface.

With these remarks upon mucous membrane in general, we come now to inquire a little more particularly into the *mucous membrane of the mouth*. To the dentist, the mucous membrane of the mouth seems to involve the great anatomical specialty with which it is most desirable he should be thoroughly acquainted—but for whose thorough acquaintance, he will soon find, that his knowledge must be further extended to the system at large, before he can expect to reap the full benefit to be derived by the practice of his profession.

The mucous membrane of the mouth forms one of the fundamental elements in the formation of the teeth, gums, lip, palate, tongue, tonsils, &c., and is as fundamentally concerned in the first stages of digestion and respiration—likewise in the function of taste, and with the still higher function of speech.

The mucous membrane lines the entire cavity of the mouth, forming loose folds or bridles at different points, as at the upper and lower lip, called (frenum labiæ)—at the under and anterior surface of the tongue (frenum linguæ)—at the englottis (frenum epiglottidis)—and on either side of the uvula, the lateral half arches of the palate constituting the fauces—and is traced continuous with the skin, as before mentioned, on the one hand, and found extending by a similar continuity of structure into the pharynx, larynx, eustachian tubes, the nostrils, the eye, and the maxillary and frontal sinuses.

The mouth, extending from the lips in front to the soft palate behind, and bounded laterally by the cheeks, has its mucous membrane present-

ing some very interesting and important modifications at different points. It has already been stated to have, with mucous membrane in general, an epithelium, a basement membrane, and a fibro-vascular structure or corium. The epithelium was also further stated to be of the squamous or tessellated variety. Now, upon the lips, this membrane by being exposed to the air, has its epithelium dryer and readily demonstrated. Its glands are numerous, and are found to be of the salivary variety and not muciparous follicles—they are called *labial salivary glands*. They are described as small spheroidal bodies of unequal size, numerous, situated between the mucous membrane and orbicularis muscle, and opening into the mouth by distinct orifices.

Upon the cheeks, the mucous membrane presents a somewhat similar character, and has its surface raised into projections by a similar series of glands, though of smaller size, lying upon the buccinator muscle, and called buccal glands. There are also two or three glands which open upon the buccal surface of the mouth by separate ducts opposite the last molar tooth, and are called molar glands. These are of the same salivary kind, and differ only by being of larger size, and in being situated between the masseter and buccinator muscles.

Upon the roof of the mouth forming the palatine processes of the superior maxillary bones, the mucous membrane, says M. Cruveilhier, "is remarkable for its whitish color, for the thickness of its epithelium, especially in front—for the thickness and density of its chorion—for its close adhesion to the bones—and for the great number of orifices with which it is perforated, especially behind."

Upon the soft palate this membrane presents the two varieties, or rather the three varieties of epithelium—the upper surface or that which looks towards the posterior nostrils, having, according to Dr. Henle the *ciliated columnar epithelium*, like the mucous membrane of the nose—while the lower surface, or that which looks to the mouth, is of the squamous or tessellated variety common to the whole buccal cavity.

Upon the tongue the mucous membrane is remarkable for the roughness of its surface, the (almost cartilaginous) density and compactness of its chorion, of its attachment to muscles, of its being the seat principally of taste, and in its presenting numerous papillæ. The papillæ are seen upon the dorsum of the tongue, and are divided according to their form, into three classes, viz. the papillar *maximæ*, or *colyciform*, situated upon the back part of the tongue, arranged like the letter v reversed, and are the largest in size—2. The *mediæ*, or *fungiform*, next in size, occupy principally the sides and apex of the tongue, and have, says,

Mr. Harrison, a red color—the 3d class are called the *conical, filiform, papillæ villosæ*—these are situated upon the greater portion of the dorsum of the tongue, are very numerous, present a whitish color, have their direction backwards, and give to the tongue its roughness or “brush like” appearance, as plainly seen by the naked eye, while these same papillæ in some of the lower animals, as the cow for example, are exceedingly long, hard, almost horny in their feel, resembling somewhat the rough surface of a rasp, and from their capability of being raised, and having both the forward and backward movement, are well suited as assistant masticating organs, in retaining and compressing the food, as well as giving it the backward direction towards the pharynx.

The papillæ, says Mr. Nasmyth, have a strong analogy in structure to the “pulp of the teeth”—and he continues, “the analogy does not rest here only, for just as the pulps are organs for the production of the teeth, so in some animals, as in birds, the papillæ of the tongue are the source of formation of horny appendages, which perform the offices of teeth, and bear a close relation to those organs.” Capillary vessels and nervous filaments, bound together by “areolo-fibrous” tissue and covered by the squamous epithelial investment, compose these papillæ—and the valuable diagnosis which physicians derive from examining the tongue, are regarded as nothing more than the various changes which this epithelium of the papillæ undergo during disease.

Upon the gums, the mucous membrane is so thick and firm as to be called dental cartilage, but the absence of the corpuscles of Purkinje reject the idea of the cartilaginous character, and in lieu thereof, Mr. Nasmyth affirms that the gums “are made up of a mass of scales lying one on the surface of the other”—and that “the alveolar epithelium is thicker in proportion to the youth of the subject examined.” The gums are very vascular and can be traced as continuous with the periosteum of the bones.

The last modification of the mucous membrane we have to notice, as connected with the mouth, is that of the teeth—and here, Mr. Goodsir and Mr. Nasmyth have not only shown the origin of the teeth to be from mucous membrane, but have further demonstrated with surprising minuteness all the successive stages in their after development—changes so remarkable, that without a knowledge of the fact, one could scarcely credit the truth, that bodies so hard as the teeth, and apparently so dissimilar in every respect to the soft, delicate mucuous membrane, could possibly have had any such parentage. The teeth were at one time classed among the bones, but now it is clearly demonstrated that the

mucous membrane of the mouth first presents a groove; that in this groove are seen little eminences, termed papillæ or tooth-germs, that these papillæ grow and are surrounded by a simultaneous growth of the walls of the groove, constituting first the follicle, and when closed, next the sac of the tooth—thus making the three stages of a tooth to consist in a papillary, follicular, and sacular, to which is added its eruptive stage. Now Mr. Nasmyth makes the following observation in reference to this remarkable modification of the mucous membrane, as connected with the teeth, which we beg leave to quote: "The first trace, he says, of the future tooth, the dental papilla, is originally a part of mucous membrane—subsequently, however, when the papilla is somewhat further advanced in growth the two tissues are entirely distinct, the former being almost wholly composed of corpuscles or cells, the latter maintaining its fibrous character. At a later period the structure of the pulp is still more characteristically different from mucous membrane while the internal surface of the capsule has become a serous rather than a mucous membrane. And, at this stage, its surface invested with a very delicate layer of cells, totally different from those of epithelium."

With this account of the mucous membrane of the mouth, we will in addition add, that it receives upon its surface the salivary fluids, and is most liberally supplied with blood vessels and nerves.

The saliva comes from the six salivary glands, three on either side of the mouth, viz. the *parotid*, *submixillary* and *sublingual*, the former supplying its fluid to the molar teeth, while the two latter supply those of the canine and incisor. The *blood vessel* for the lips and cheeks come from the coronary arteries of the facial, a branch of the external carotid, and the *buccal*, *infraorbital*, *alveolar*, *mental* and *masseteric*—all branches of the internal maxillary, which also comes from the external carotid. The palate, gums, teeth, and tongue are supplied pretty much from the same source, the palatine arteries going to the palate, the superior coronary to the gums of the upper, and the submental and sublingual to those of the lower jaw, while the superior, inferior dental, and infra-orbital go to the teeth. And the lingual, palatine, and inferior pharyngeal to the tongue. The veins correspond very closely with the arteries as to name and direction, and do not require further notice.

The nerves supplying all these various parts come principally from the 5th, 7th, 8th, and 9th pair.

The last point we propose to notice, is, the several *relations* of the mucous membrane of the mouth.

These may all be classed under three heads, viz. 1. The physical. 2. The organic, and 3. The mental.

The *physical*, are those which this membrane has with atmospheric air, our food and drinks, and the salivary fluids with which it is brought in contact, when introduced into the cavity of the mouth.

The air, it is known, has to pass through the mouth in its passage to the lungs during respiration. Now this air, in respiration, will carry to the lungs through the mouth, in contact with its lining mucous membrane, all the impurities with which it may be loaded from without, and return in expiration, in the same way, surcharged with deleterious properties which must be expelled from within, so that if the air should depart very materially from its natural healthy, or physiological condition, the mucous membrane of the mouth will be in danger of suffering in proportion to such departure, and the general condition of the system. Food, by remaining in the mouth, may undergo chemical decomposition, and develop corrosive agencies which may destroy the teeth and gums as well as the other portions of this lining membrane of the mouth. The salivary fluids, though secreted alkaline in health, are, nevertheless, we are told, during fasting, acid, and then if we add to this the acid mucus of the mouth, which is said to be the case during disease; we have thus a combination of agencies capable of acting upon and injuring the best denture, while in one which is bad, ruin must be inevitable, if this state of things be not arrested by proper treatment.

The *organic relations* of the mucous membrane of the mouth are strikingly obvious, and most especially that portion covering the tongue it examined when the general system is laboring under disease—for, here we find, as upon a tablet, that the stomach and liver, with other organs, report their complaints, and expect to find sympathy of feeling in their behalf.

And here also it is, the physician invariably looks for his most valuable diagnosis, into the condition of distant organs, by simply inspecting the various appearances of the mucous epithelium as indicated upon the tongue—so also with the gums, the teeth, and every other portion of the mucous membrane of the mouth, each having more or less relation with the various organs of the body.

The brain, standing as the instrument and representation of the mind, constitute, what we have thought fit to term, the *mental relations* of the mucous membrane of the mouth.

It is well known that the mind has great influence in increasing, suspending, and altering the secretions—while on the other hand, tooth-

ache may so irritate and fret the mind as to amount almost to partial insanity—and further that if the teeth, palate and other parts are wanting, the mind, having no medium of communication, is, so far as speech and articulation is concerned, silent and completely lost—and lastly, viewing the brain simply as an organ in sympathy with the mucous membrane of the mouth and teeth, we see how these latter, in teething, will, through the fifth part of nerves, so powerfully act upon the brain as, through it, to often throw the child into the most powerful convulsions, by expending its fury upon the muscular system.



REMARKS AND RECOMMENDATIONS ON THE PROFESSIONAL EDUCATION OF DENTISTS.

BY JOHN TRENOR, M. D., DENTIST, OF N. Y.

We are indebted to the courtesy of the author for a well written pamphlet, bearing the above title, in which he undertakes to show—"That in the practice of Dentistry a thorough knowledge of Medicine and Surgery is absolutely essential to enable the practitioner, clearly to understand, and successfully to treat the cases which are constantly coming under his care, sometimes demanding all the skill, experience and acquirements which the most accomplished practitioner is capable of attaining."

To demonstrate this proposition, the author proceeds to speak, 1st. of medical dentistry—2nd. of Surgical dentistry—and 3rd. of Mechanical dentistry—and cites particular cases of disease, illustrative of each respective department, and comes to the conclusion.

"That those who present themselves before the public for their confidence and support, whose capabilities rest solely upon their Mechanical expertness and ingenuity" are but *one-third* educated, in a professional point of view, after a liberal allowance has been made for them.

We think no candid person can read this production of Dr. Trenor, without feeling the absolute, and indispensable necessity of a Medico-chirurgical education in order to meet the just expectations of the public, on the part of a practitioner of Dental Surgery. The arguments are forcible and well put, and the illustrations to our mind, quite conclusive and pertinent, as touching such necessity.

No man, can be *too well* qualified for his professional duties, either as Physician—Surgeon—or Dentist. But if the *highest* order of talent, combined with the most *thorough* education and professional skill *must*

be attained before a man is considered competent to *enter* upon his duties, either as Physician or Dentist, then by far the greatest proportion of practitioners now in full blast, must be regarded, as *pretenders* only. And in fixing the standard of professional qualification, we cannot even depend upon the title of M. D., for in these days, this title presupposes no such preëminent and distinguished qualifications.

We think the Dr. has pushed the argument *too far*, and has thereby undertaken to prove too much. Unless it is his intention to claim for the Dentist a higher standard of professional education, than for the physician and surgeon. For certainly, if a "thorough knowledge of medicine and surgery is absolutely essential to enable the Dentist clearly to understand and successfully to treat the cases which are constantly coming under his care"—he has *all* that the most distinguished of the medical profession can claim, and superadded to this, his mechanical knowledge—ingenuity and tact—to which the other makes no pretension. We are by no means the advocate of a superficial professional education, for the practice of the *speciality* of Dentistry. Yet we can conceive of a standard of dental education, which should satisfy the minds of reasonable men, not quite so extensive and "*thorough*" as that contended for by Dr. Trenor. And we cannot understand what advantage would accrue to the practitioner of Dental Surgery, if he really understood in detail all the minutæ of medical practice, so far as the practice of his speciality is concerned. There is very much in *Pharmacy* and *Materia Medica*, as well as in *Obstetrics*, which a dentist will have but little occasion to use in the legitimate practice of his profession, which the practitioner in medicine could not well dispense with. While at the same time the *fundamental principles* of medicine and surgery, without their endless details, we regard as *indispensible* to a complete dental education.

The laws of Physiology and Hygiene—the Principles of Pathology—Morbid Sympathy, &c., we can easily understand to be essential to the successful practice of our profession, together with a general knowledge of Anatomy as relates to the whole system, and a *special* knowledge of the same, as relates to the practice of Dentistry. But we do not see the necessity of requiring of a student of Dentistry that *special* knowledge which is so essential to the *Occulist*, *Aurist*, *Lithotomist*, or *Obstetrician*, before he can be regarded competent to practice his speciality.

We have read this paper from the pen of Dr. Trenor with some attention and no little interest, and unless he may be supposed to use terms and employ language for rhetorical effect merely, we can but

think that he has fixed a standard of dental education, which will astonish even the medical as well as the dental profession; for it will sound odd to them, to hear that the standard of dental education is to be elevated above their own. When it is no doubt deemed by many of them a concession on their part, when they acknowledge our profession as a *legitimate*, although a somewhat inferior *branch* of the science of Medicine. And it is only after a "thorough" knowledge of medicine and surgery has been obtained "in accordance with the rules and requirements of our medical schools," that the dental student can feel that he has "mastered full two-thirds of what should constitute his professional attainments."

The conclusion of this paper is devoted to the consideration of the question as to "what manner that course of education necessary to a practitioner of dentistry can be best acquired"—and the writer concludes that "the most obvious, and it is believed, the only certain mode by which ends so desirable could be obtained, would be by constituting a professor who should give a regular and full course of lectures on this branch in our medical schools, and in this way its true principles and correct practice would be as effectually inculcated, and its peculiarities and difficulties, whether medical, surgical, or mechanical, as fully explained and as clearly demonstrated as in that of any other department of medical science." As to Dental Colleges the Dr. disposes of them in a summary manner. He says, "they come before the public with such confident promises, and plausible pretensions, and, as at present constituted, are so decidedly inefficient, that they are a greater drawback to improvement than if they had never existed."

"They profess to remedy an evil which they most effectually and glaringly magnify." This we deem the "unkindest cut of all." Even allowing that our Dental Colleges, yet in their infancy, are not all that they might be, or that they are likely to be, we are not prepared to sweep them out of existence with a single dash of a flippant pen. And we certainly are among the number who believe, that to the Baltimore College *especially*, the dental profession in this country are greatly indebted for their present character and rank as a speciality of medicine, and the cordiality with which they are acknowledged as such by the medical profession.

That they have done much to elevate and advance the profession we cannot doubt. That they have succeeded in their efforts to supply the public with many practitioners of dentistry, more thoroughly educated in theory and practice, and in all that relates to a dental education, than

the *average* of those who graduate in medicine, as physicians, we firmly believe. And in reviewing the progress of dental science for the last fifteen years in this country, and considering the various elements and agencies to which we are most indebted for our undoubted advancement, we can but feel that the organization of these colleges mark a distinct and auspicious era in the history of the dental profession. And while the pioneer institution at Baltimore presents the first and strongest claim to our regard, we most heartily wish them *all* an abundant success. And since they have come so nobly to the rescue of the profession when the medical schools of our country turned toward us the cold shoulder of scorn and neglect, we cannot now find it in our heart to depreciate their claims to the regard and the confidence of the public.

And if it be conceded that a man is competent to practice dentistry with a knowledge of the general principles, without the minuter details of Medical Science, which have no immediate connection with this speciality, then do we hold that Dental Colleges are fully competent to supply the necessary professional education, and all that is demanded on the part of dental students or required by the public.

And while we greatly respect the talent and out-spoken frankness of the author of these observations, we humbly conceive that the fundamental mistake of the writer, and that upon which his whole argument turns against the present dental collegiate course of education, consists in making a "*thorough*" medical and surgical education a *sine qua non*, in order to practice dental surgery."

And this word "*thorough*" being understood with the amplitude evidently attached to it by the writer, who does not see that the standard of dental education is hereby elevated above that of medical practitioners. And that none but the most *eminent* of the medical faculty are competent to practice dentistry, and then, only when they shall have super-added the requisite mechanical knowledge.—*Norwalk Ed.*

EDITORIAL GOSSIPS.

"Cheating in all trades but ours" is an old saying and well understood. And if any man supposes that dentists have anything more than an average degree of honesty, he must be a person of large charity. And quite unlike an old medical friend of ours to whom we had the pleasure of an introduction when we first came to our present locality

some dozen years ago. "Dentist, Dentist"—said our medical friend, "why this term is synonymous with *Rascal* in this place"—And who do you think were our predecessors, kind reader? we will not mention their names, lest some of you should know them, as they belong to the migratory species, and may have visited your own locality.

But they are a somewhat peculiar *genus*, and perhaps worthy of a more particular description in order to an easy recognition.

Imagine Dr. Forceps, temporarily stopping at the village hotel, after meals he may be seen walking leisurely upon the piazza seeking an occasion for incidental conversation with his fellow visitors, "Let me see"—says Forceps—"you are from the city, are you not?" No sir, I am from the country. Ah! yes, I was almost sure I had seen you in New York, however, I am accustomed to see so many different faces, that I am really apt to confound them"—This serves as an introduction and very soon, you will see Forceps, wisely gaping into the mouth of his unsuspecting victim, and hurriedly descanting upon the great necessity and importance of immediate attention to his teeth. Forceps has an office in Broadway—has practised many years—but finding his confinement, and arduous application to professional duties preying upon his physical health, he has come to spend a few weeks in the country to recruit his wasted energies, and rusticate a little and just in order to keep his hand in, he is willing to give the country folk his advantages of his great professional skill, and long experience in Dentistry. Cards are exchanged—an appointment made, and *O mirabile dictu*—The poor countryman goes home to learn from sad experience, that for once he has fallen into the hands of a perfect "*Land-Shark*"

This, of course, is a mere "charcoal sketch"—yet possibly some reader of the Recorder, may recognize the outline, and fill it up to suit his own fancy.

Dr. Hawks-bille, belongs to the same genus, yet a distinct species—He is a "Natural genius"—took up the business himself, made all his own instruments, has "pulled" more teeth than you would be willing to count, can set teeth on "suction," "cure tooth-ache in a minute, without pain," has a gum-wash, that will destroy all the animals around the necks of the teeth, &c., &c. This specimen, carries his office with him, peddles his wares from house to house, fleeces his victims wherever he can find them, and then is ready to *vamosé*.

But *Dr. Cheap* is the man of all others, a very benevolent man; he is greatly grieved at the wonderful *extortion*, and most exorbitant prices which dentists charge for their operations. Why, he can extract teeth

for a shilling—fill teeth with gold for fifty cents—clean teeth for twenty-five—and all other operations in proportion. Put in a whole upper set on atmospheric pressure, for twenty-five dollars, and warrant the gold plate to be eighteen carats fine, and make a large profit, at that. He is really, a man for the times. He goes for “Kossuth and intervention” for temperance and the “Maine law.” He is opposed to monopolies—has no objections to dealing in Drugs and Medicines, Sarsaparilla, or the tea business, can turn his hand to any thing. Or, in the language of our daily papers, “Make himself generally useful”—and “can give the best of references.” Has “*practised* in New York,” and “knows all the ropes.”

Yes, he *has* “*practised*” in New York, and we doubt not that friend Jones or Stockton know him well.

Such, kind reader, are some of the characters which go to make “the name of Dentist synonymous with rascal.”

Professional “*tinkers*” and “*pedlers*” are no new thing under the sun, and as every thing goes by contrast, perhaps they are necessary, and society can use them as painters use shadows.

We clip the following from the last number of Braithwait’s *Retro-spect* :—

“TOOTH ACHE.—The most intense tooth ache connected with decayed teeth is relieved in a moment, by the magic touch of the membrana tympani with a blunt probe. Agonizing neuralgia of the face is relieved in the same way.

“These effects are supposed to be produced by the influence of the chorda-tympani nerve.—M. DESTERNE, *Lancet*, June 7th, 1851, p. 626.”

Speaking of tooth ache, we might as well keep our readers posted with reference to discoveries in this line, and we therefore submit the following :—

“Young’s American tooth ache drops ! A certain cure for the tooth ache, in *one minute*, without pain or danger,” &c., &c., &c. “Will instantly cure an ulcerated or sore gum.”

A few days since, a vender of the above cure (?) came into our office, and desired to sell us a bottle of this wonderful preparation. A young lady patient had just come in the room with a severe tooth ache. We concluded to try it on the spot, and accordingly applied some to the patient’s tooth, which was an inferior molaris. But the pain would not cease, it rather increased, so, after waiting a short time, we told the

agent we would now proceed to stop this pain with our own remedy, and he might witness its success. We then took a pledget of cotton, dipped it in some chloric ether, applied it to the cavity, and the pain ceased immediately, much to the agents astonishment, who, protesting that he had never failed before in a *single instance*, left the office.

We then stopped the cavity with gold, and have since heard no complaint from our patient. Meanwhile, we have extracted a large molar tooth from a gentleman's mouth, who had previously tried this wonderful remedy with no advantage, and exclaimed, as he came to our room, "Any port in a storm."

A singular instance of galvanic action from wearing a gold plate, recently came under our observation. We had mounted a partial set of teeth in the usual way, for a lady friend, on what we felt assured was a *fine gold* plate. After wearing them for some time, our patient returned to us, with the complaint that the plate made her gums sore, and as this is no unusual thing when plates are first introduced, we examined them, and encouraged her to persevere, telling her all would soon be well. Not long after, she returned again, with the same complaint, and said she could not wear her teeth. We examined them again, to assure us, that there was no mechanical irritation, and, after some trifling alteration, dismissed her to try them again. But with no better success. Again and again she called, but we were at a loss what to do—the piece fitted well, and when first put in was perfectly easy, and we accordingly informed her that other people wore them with comfort, and we could not doubt but she would be equally successful, if she would but persevere. She was pleased with the appearance of the teeth, and desired to use them, but, said she, "after wearing them for a few hours, they make my mouth so sore I am under the disagreeable necessity of removing them." This was a fix. What could we do with them? They fitted well—there was no cutting or abrasion of the gum—the plate was not discolored—it was eighteen carat—what was the matter? We persuaded another trial. We felt assured she *must* succeed. She made the effort, but with no better success.

The question then presented itself,—can it be the result of galvanic action? We requested her to make a solution of the super-carbonate of soda, and rinse her mouth whenever this soreness occurred. Some weeks afterward we saw her and inquired whether the difficulty continued, and was somewhat surprised to learn that since the use of the soda solution, she had not the least trouble. This case suggests to our

mind, several questions, first, was this a case of galvanic action of the plate, or was it more properly speaking the result of chemical changes between the plate and gum, in particles of food, or mucous retained between them? May there not be such peculiarities of the secretions of the mouth in different individuals as to develop galvanic action from a good gold plate, in one case, without producing a like effect in all? And what proportion of copper will gold bear, without showing its susceptibility to galvanic action, where the fluids of the mouth are favorable to its development?

Why may not galvanism be successfully applied to relieve the sensibility and pain of the teeth? Some months ago, a gentleman called upon us for the removal of a painful tooth, the left inferior bicuspid. On examination, we could find no just cause for its condemnation. The patient was a blacksmith. Naturally stout and robust, but when we saw him, almost as weak as a child, from suffering, and had left his bed for the purpose of having this tooth extracted. The tooth was free from carries, yet exceeding sore, and painful. The gum highly inflamed and the neck of the tooth slightly incrustated with calculi. Various remedies had been resorted to with no relief, and the patient nearly worn down with suffering insisted upon its removal. After applying ether, chloroform, soda, and such like applications without success, we took a piece of zinc and silver, put one on each side of the tooth, bringing the tops together, and the tongue and lips in contact with the metal, when the pain immediately ceased. Being curious to continue the experiment, we prepared a metal, in a convenient way to be worn, and dismissed the patient entirely relieved. He soon resumed his ordinary health and business. and we believe still retains this very tooth.—*Norwalk Ed.*

PIVOT TEETH.

We have several times alluded to the very inefficient method of inserting artificial teeth upon fangs with wood pivots. During the past few years we have generally used gold pivots for all cases where it was important to preserve the fangs as long as possible, and thus postpone the time when it would become necessary to fit a gold plate with artificial teeth to be sustained by clasps upon the natural ones. In many cases the insertion of a pivot tooth is a merely temporary operation, designed to remain only until other neighboring teeth, too much decayed to be filled, shall break away, or until other fangs already sus-

taining artificial crowns, shall fail, and thus make it necessary to extract them preparatory to fitting a plate; in such cases the wood pivot will answer very well; but where all but one or two of the incisor teeth are sound or so filled as to ensure their permanence for many years, it becomes a matter of great importance to the patient that the fangs should be so treated as to be preserved as long as possible.

Experience has undoubtedly convinced us all that when an artificial crown is delowed upon a remaining fang, with wood, the action of the antagonistic teeth while biting, will soon press the crown out of place, bending the pivot and thus making an opening between the crown and fang for the lodgment of foreign matter, which soon decomposes, rendering the breath very offensive, the gums spongy and diseased, and causing the fang to decay rapidly. Almost every fang which has sustained a crown engrafted upon it in this way for one or two years will be found decayed funnel form around the pivot, and will in the end be lost by decay from this cause.

To remedy this evil we have of late years substituted the gold pivot, where it was practicable. For some time we used the mineral teeth manufactured by Mr. Stockton, with platina tubes, and soldered the gold pivot to the tube. When these could not be found of the desired size or color, we used plate teeth, attaching the pivot to a small plate covering the end of the fang, and soldering the gold back to this plate in the usual manner. Teeth inserted in this way have given great satisfaction, and have stood firmer and protected the fang from decay longer than when hickory has been used.

Of late, however, we have adopted another plan, which enabled us to use the common pivot teeth, such as are made for wood pivots. We select a tooth of the proper shape, size, and color, (when we can find it,) and fit it to the fang in the usual manner, trying it in with a soft wood pivot. This pivot serves as a guide for the gold one. If the fang be in the natural position, the end of the pivot in the crown will point directly towards the cutting edge of the tooth, midway between the two approximal surfaces, but if the fang is misplaced, the pivot must be varied accordingly, which will be shown by the soft pivot after the crown has been fitted. A piece of gold wire should then be selected but little smaller than the pivot hole, or almost as large as the ordinary sized hickory pivots, for if it be so small as to be bent by the same force that bends the wood pivot, it will be no better than that is; but if made as large as it can be, no force, ordinarily used when biting with the front teeth will bend it, and if it be stiffened with an alloy of platina it

will be all the better. The pivot is then placed in the crown and secured in the proper position, and pointing in the right direction, by a small piece of wax on the back. The whole front and sides of the crown must now be protected with plaster and sand, or what I have recently (thanks to Messrs. Hunter and Allen) found to be still better, plaster and asbestos, which must be carried up on to the end of the pivot, so as to secure it firmly in the proper position in the pivot hole. The wax must then be removed from around the pivot, where it enters the crown so that the pivot hole may be free. Now fill in around the pivot with finely ground enamel, taking care to jar it down to the bottom. For this purpose I have used the common jewelers enamel, and found it to answer well. It may be used wet and applied with a camels hair pencil. The plaster and enamel must be thoroughly dried and the whole carefully heated, with the crown downwards, until the enamel is completely fused. If once heating does not completely fill the space around the pivot, after it is cool it may be applied again and fused as before. When well soldered or enameled, in this way, it will be impossible to draw the pivot from the crown with a pair of common pliers.

The pivot may now be securely inserted in the fang by winding it with waxed thread to make it just the right size to go tight into the fang. We have inserted several teeth in this way, which have now been in from one to two years, and thus far answer admirably. The operations have pleased us better than any other plan which we have tried for inserting pivot teeth.

DR. TALCOTT'S ADDRESS.

The address of Alven Talcott, M. D., delivered in behalf of the board of examiners, before the graduating class in the Medical Institution of Yale College, contains much that is useful and instructive to Dentists as well as Physicians. We commend the following to the reflection of our readers:—

“It was the quaint advice of an old physician to his pupil when commencing practice, ‘Be always found with a book under your arm.’ But be not so unwise as to adopt implicitly every principle advanced in the books you read. ‘Read,’ says Lord Bacon, ‘not to contradict and confute, nor to believe and take for granted, nor to find talk and debate, but to weigh and consider.’ Be familiar with all the new theories and new modes of practice, but bear in mind that every innovation is not an improvement. It is not very probable that the great principles of me-

dicine, which like ancient landmarks have stood the test of time and experience for thousands of years, will be displaced or superceded by any one of the newfangled theories of our day, which like Jonah's gourd spring up in a night, and perish in a night." * * *

"Be ever careful to sustain the dignity of your profession. Cultivate an *esprit du corps*. Never allow yourself to speak light or disparagingly of the profession or of its members. Be on terms of friendship and good feeling with your professional brethren. Let all narrow-minded jealousy and petty selfishness be ever strangers to your hearts. Consider every member of the profession as your brother, and feel that to advance his interest is to promote your own. The world is wide enough for all of us." * * * * * "If you have learned anything that will be of essential service to your fellow men communicate it freely and let all share the benefit, and take a firm and decided stand against all who make use of secret remedies. Concealment and mystery may take with the multitude for a time, but they are beneath the dignity of an honorable profession and can confer at best but a short-lived popularity."

If dentists ever hope to form, independently of medical men, a honorable and respectable profession they must adopt the above as a part of their faith and carry it out in their daily practice. They must first be intelligent and then courteous and benevolent one to another.

MISSISSIPPI VALLEY ASSOCIATION OF DENTAL SURGEONS.

Much of the time at the last annual meeting of this Association was employed in discussing the merits of Dr. John Allen's recent improvement in the construction of "continuous gums." Early in the session, a resolution was offered to award to him a gold medal, subsequently a committee was appointed to examine and report upon the subject. The committee, after due consideration could not agree, and therefore made two reports. That of the majority being in favor of the alleged improvement and containing the following resolution.

"*Be it Resolved*, That Dr. Allen deserves all commendation for his indefatigable exertions, in thus developing and making available a new and important improvement in mechanical dentistry, and that we recommend this improvement to the profession as worthy of their attention."

The minority reported the following :

"*Resolved*, That it is now, and always has been, the sentiment of this

society, that it is derogatory to the professional character of any of its members to patent any instrument or improved mode of practice. And, inasmuch, as the forbearance of this society has heretofore been misunderstood, we do now declare, that for any member of this society to patent any instrument or improved mode of practice, shall be deemed sufficient cause for expulsion."

Dr. A. M. Leslie spoke at great length against the adoption of the majority report and in favor of that of the minority. He went on to show by precedents established by the society that it had always condemned the practice of patenting improvements and inventions in the dental art, and quoted several resolutions passed by the society, and addresses delivered by its officers before the society to this effect. He then asked if the society was ready to abandon this position. He contrasted the estimation in which those gentlemen of our profession are held, who have freely given their knowledge and improvements for the benefit of all, (naming particularly Dr. S. Brown and Dr. Spooner,) with those who have placed their light under a bushel, or restricted its diffusion by a secret or a patent. He then went on to question Dr. Allen's right to the credit of having originated this improvement. He said the first specimens of Dr. Allen's work of this kind was done with Levett's enamel, and were not satisfactory to the Dr. himself or to those members of the profession who saw them. This was towards the fall of 1849. He farther declared that in his opinion the credit of first uniting single teeth by a continuous metallic base, (thus forming block work,) was due to Dr. William M. Hunter of Cincinnati, who explained it to him (Dr. Leslie,) as early as 1846. That Dr. Hunter sent specimens of this style of work to the World's Fair in London, and that it was months after they were sent away that Dr. Allen produced any thing like them. Dr. Leslie also contends that Dr. Allen received much of valuable instruction from Mr. Steemer, a German, and enameler by trade. He concludes his argument by giving Dr. Allen full credit for the idea of securing or fastening his teeth to the plate by means of the enamel or fusible cement, thus doing away with all solder and metallic backs or pivots,—to fully test this, however, he says requires some time.

Dr. James Taylor, in reply, stated that he had changed his mind somewhat in regard to patents; he had been opposed to members of our profession procuring them; but he now thought it right to patent any thing "*strictly mechanical*," but he was as much opposed as ever to patenting any thing in our profession calculated to relieve the sufferings of poor humanity in the treatment of disease.

Dr. Leslie then contended that Dr. Taylor had abandoned the whole ground, and had not so much as a "flint" left of the weapon which he had formerly wielded so formidably against patents.

Dr. John Allen next took the floor and denied that he had ever received any valuable instruction from the "Dutchman," Steemer,—that he merely employed Steemer in his laboratory to assist him "by grinding materials," &c. "As to Levett's enamel," said Dr. Allen, "we all know that it is of no use whatever, so that he has not helped me any." Dr. Allen also stated that there was no similarity between his improvement and that of Dr. Hunter. He also contended that every member of our profession who expended his time and money to improve the art or to make inventions in the same, should be entitled to secure the emoluments arising from the use of the same to himself by a patent, and unless this right is allowed "every man will keep his improvements to himself."

The above is the substance of the discussion relative to the merits of the question of Dr. Allen's improvement. We commend the whole discussion to our readers; they will find it in the last number of the *Am. Jour. of Dental Science*. Whatever opinion they may come to concerning the improvement, we contend that the ground taken by Dr. Leslie against obtaining patents in our profession is the only dignified and professional one which can be maintained.

REBUTING TESTIMONY.

In our last number we gave, by the request of Dr. Darling, his denial to some of the assertions of Dr. Hunter in a previous article. We are now requested to publish the following certificate to substantiate the original assertion. We did not intend to enter into the controversy between our western brethren, except so far as the subject is of general interest to our readers. If the new plan of making "block work" or "continuous gums," shall prove to be an improvement upon any of the old methods, we shall be glad to know who to give the credit to, and for this purpose we shall endeavor to ascertain the truth and the whole truth.—*Ed. Recorder*.

I hereby certify that Dr. E. G. Darling, prior to my acquaintance with Dr. Hunter, spoke most favorably of some specimens of Hunter's work, at his own table in presence of numerous individuals, at the same time mentioning that the work was designed for the "World's Fair." His expression was, that it was the best work he had ever seen in his life. I mentioned it to Hunter as a complimentary remark that I had heard, without knowing of any dispute amongst the doctors.

Cincinnati, March, 16, '52,

B. F. WIGGINS.

DR. HUNTER'S CLAIMS VINDICATED.

BY HIMSELF.

[No apology is needed for the length of this article, except for the delay of the Recorder to give it place. If there is any *improvement* over the old plan, in this new way of making block work, it is a matter of some importance to the profession to decide who is entitled to the credit of originating it, and that credit should be given where it is due. When the controversy is ended, and all the facts are published, we doubt not the dentists will be able to form a just verdict. At present we shall not prejudge the question by deciding in favor of either of the claimants. We are assured by Dr. Hunter that the following is a "truthful statement of facts, and that there are no assertions which cannot be proven, and for which he is not responsible."—*Ed. Recorder.*

The last number of the Recorder contains a tirade of ignorance, malice, and mendacious pretension directed against me, to repel which, and to show up the means made use of to deprive me of the credit of being the first person in this country to manufacture artificial teeth into a complete denture, both useful and permanent in the mouth, I must again solicit your kind indulgence and the use of your pages. Antagonistic claims to my own are of such recent date that I need not date my claim further back than the time at which I exhibited specimens of my improvements to those familiar with dental operations.

In the latter part of 1850, I showed specimens, made for exhibition at the World's Fair, to Dr. W. A. King, (at that time a student of Dr. James Taylor, and Demonstrator of Mechanical Dentistry in the Ohio College of Dental Surgery,) and described by him at that time to Dr. Taylor. One set shown to him was made of teeth made by myself, of a natural shape on the lingual side as well as the labial side of the tooth; mounted on platina plates in continuous arches, and an approximate representation of the natural gum, on the lingual as well as labial side of the arch. There was no *visible* means of fastening, except the gum enamel which united with the plates.

I bought a full set of teeth (of Jones, White & Co's. manufacture) of John M. Brown, M. D., (Dr. Brown is the proprietor of the largest dental furnishing house west of the mountains,) telling him at the time that I was going to mount them and send them to the World's Fair. These I mounted in continuous arches on silver plates, soldering thereto by the ordinary strap; when finished I showed them to Dr. Brown, and Mr. John T. Toland, his chief clerk, and several persons not familiar with artificial teeth. Another set (of J. W. & Co. teeth,) was made on platina, soldered to the plate with a strap in the ordinary manner, with pure gold, and the base filled in afterwards. All these specimens were shown to Dr. Brown at various times before sending them away, and were in London at the time specified for the reception of goods; and prior to the entry of Allen's caveat at Washington. Dr. Brown left Cincinnati in February, 1851, and returned about the last of October. Previous to leaving he described the work that I had shown him to Allen, as minutely as he was able to with all of Allen's questionings, not being a practical dentist himself, and yet familiar with all ordinary modes of mounting teeth. He had never seen any work of Allen's in the mouth, at all resembling mine at this time, except a small job in the winter of 1849-50, which

was in the mouth of a gentleman whom Dr. Allen brought to Brown's store to exhibit the work, and which job was largely expiated on by Allen for Brown's edification. B. says that it was done on gold plate, such as is usually used, and the teeth mounted in the ordinary manner, and a gum flowed around and underneath the teeth. He also states that the work was like a specimen which I showed him done with Levett's enamel, (the exclusive right to use which, in this city, was at that time held by Allen,) and that too by John Allen.

About the middle of May, Allen showed a specimen of teeth mounted on platina, with a gum flowed around and beneath them, to Mr. Toland, and said that he never had an article please him until that time. I wish to show by these and concurrent facts that John Allen, after having got a description of my work, has made but an imitation, and that too by the aid of Chas. Steemer, whom he told the ends he wished to accomplish, and whom he paid for accomplishing those ends. To show the protean nature of his mode, I will commence with his letter April, 22nd., to Dental Register, which did not appear until the middle of May; he there claims, "the discovery of a FUSIBLE CEMENT, by means of which porcelain teeth can be united to each other, and to metallic plates so firmly as to preclude the possibility of being broken from the plate by mastication; I have *fully tested* the practicability of this style of work." He claims, also, great strength, that it obviates the necessity of back plates, and soldering to the plate, thereby preventing warping of the plate. Then follows Taylor's exaltation; his breast warms up, and he exclaims, "if we mistake not this improvement will entirely supercede what are called block teeth;" then follows his prophetic doubt, "if it continues to adhere as firmly," &c., "it will possess all and more than all the advantages of block work," &c. Here he professes never to have heard of my improvement, which was designed and perfected to overcome the difficulties of block work, and yet pays tribute to an imitation of it in other hands, and congratulates himself that he has at last got something that will compete with block work. Dear, *disinterested* soul! In the Register, three months later, Allen says, "from experience thus far, we find the cement amply sufficient without other fastenings, but where it is desired, back-plates can be soldered on with great facility," for which I suppose he claims originality also. "I use gold 22 carats fine, with no alloy but platina; I also use platina, which I think still better, as there is less expansion and contraction in platina than in gold, when subjected to a strong heat." A. M. Leslie described the application of alloys of gold and platina to dental purposes, in the Dental Register, so that he cannot claim originality for that, even if it would answer his purposes; but we have proof that it does not, in the fact that platina is preferred, and that some of the specimens exhibited to the American Society of Dental Surgeons were made by him for the mouth, and returned upon his hands as being perfectly worthless to the patients, having warped in the fire; that platina is used by him, and his dupes here, to the entire exclusion of gold, backs are also used by them, as the only safe means of fastening the teeth to the plate, nor is there any effort made to disguise the fact. Too many cases have crumbled under the power of the masseter-muscles to continue *fancy* work. The majority of the committee of the Mass. Valley Association, say the alloy used is over 23 carats fine, which, with the *then* system is extolled. Gentlemen all, why now "heave over" tooth alloy and the principle of uniting? Is it because they have been found useless for the purposes intended? Is it not strange that Goddard and Taylor should have been deceived by their friend and brother, Allen? but it is strange they should persist in the infatuation after the facts presented. In the October number of the Recorder, John Allen states that I do not know anything of his materials or mode of application, and proceeds to depreciate Steemer's recipe, and scouts the idea that there could exist any similarity between that recipe and his own. "The stuff referred to has been scanned with the same close scrutiny as the rest of the thousand and one fruitless experiments that I have tried and thrown aside as useless." If he re-

ceived as much from each other of the thousand and one experiments, (his own and Levett's included,) as from this, he has done very well. "Let it be born in mind, that the records of the patent office, with abundance of other testimony, will substantiate my claims," &c. This "abundance of testimony," as given in the Recorder, won't bear a strict scrutiny. First comes Darling's oath, that, "Steemer's method was of no use for dental purposes," and was "entirely different as regards compound and application," from Allen's, &c.

Now, as regards the patent office records he is safe, for no information relating to caveats is ever given to other than the inventor. That record, however, does show that his patent was granted during the week ending Dec. 23, 1851.

Allen asserts, in the Feb. No. of the Recorder, that "Steemer obtained a knowledge of his preparation for sustaining the teeth," &c., "when in his employ." It is scarcely probable that he would have obtained a knowledge of the ingredients only, for Allen states that he was doing work on his new plan when Steemer was there.

He also acknowledges the purchase of Steemer's recipes for enamel, and in all of his advertisements he has asserted that Steemer knew nothing about the dental business except what he learned in his laboratory, and affidavits are brought to sustain the assertion. See Burckhardt and Muentner.

In his affidavit, Darling acknowledges that he acquired a knowledge of Steemer's alleged invention for mounting teeth, and goes on to say, that Steemer knew nothing of the dental business or what was required for artificial dentures. How can these two statements in the same sentence be received?

So much for the doctor's "mode of application," for the compound, I will place Allen's and Steemer's side by side.

"I hereby certify that the following is a true and exact copy of a formula for an enamel which I sold to Dr. John Allen, and also to Dr. E. G. Darling, and which was to be used by said parties for the purpose of fastening mineral teeth to each other, and the plate upon which they are to be set. *Formula.* Silex 2 oz.; Borax, 1 oz.; Spar, 1-8 oz.; White glass, 3 1-8 oz. CHAS. STEEMER."

"John Denuhard, Interpreter."

The test of this material was made at Steemer's own house, as he declares, and he was not paid until Allen was satisfied that it *would answer his purpose*. (See Cin. Gaz., Dec. 20.) After having given him this formula, he went to Allen's laboratory, for the first time, to prepare a quantity of the material, which was done by grinding the substances together, fusing and grinding again. Here is Allen's mode, from the records of the patent office—

"To all whom it may concern. Be it known, that I, John Allen, of Cincinnati, in the county of Hamilton, and State of Ohio, have invented a new and useful mode of setting mineral teeth on metallic plates, and I hereby declare that the following is a full and exact description of the same:

"To enable others skilled in the dental art, to make and use my discoveries, I will proceed to describe the composition and mode of application.

"The cement may be formed of any of the known fluxes, combined with Silex, Wedgwood and asbestos, intermixed with gold and platinum scraps, which forms a metallic union with the plate upon which the teeth are set. The compound which I prefer is composed of Silex, 2 oz.; White or flint glass, 2 oz.; Borax, 1 oz.; Wedgwood, 1 1-2 oz.; Asbestro, 2 drachms; Felspar, 2 drachms; Kaolin, clay, 1 drachm.

"This compound should be intermixed or underlaid upon the plate with gold and platinum scraps. The *gum color* consists of Felspar, 1-2 oz.; White glass, 1 oz.; oxide of gold, 1 1-2 grs. Mix moisten, and apply with a brush.

"*Application.* I construct my plates, and arrange the teeth thereon in the usual way. I then apply the compound in a plastic state upon the outside, between and around the base of the teeth, so as to form an artificial gum upon the teeth and plate. The teeth and gum are then covered with a mixture of asbestos and

plaster of paris, mixed with water and reduced to a plastic state; the teeth being thus covered, the wax is removed from the inside of the teeth, and the cement is applied thereupon, and also upon the plate, so as to fill up all the interstices around the base of the teeth. When the cement and mixture thus applied becomes entirely dry, the work so united, is put into a furnace, sufficiently heated to fuse the cement, and immediately after the fusion thereof, it is withdrawn from the furnace and cooled slowly, the plaster mixture is then removed and a gum color applied. The work is again placed in the furnace as before, and when fused, withdrawn and cooled as before, by which means the metallic back-plates, solder, and blow-pipe are dispensed with, although back-plates may be attached to the teeth if desired. Finally, what I claim as my invention, and desire to secure by letters patent, is a new mode of setting mineral teeth on metallic plates by means of a fusible silicious cement, which forms an artificial gum, and which also unites single teeth to each other and the plates upon which they are set.

"I also claim to be the inventor of said cement or compound, a full and exact description of which is herein given; I also claim the combination of asbestos with plaster of Paris for covering the teeth and plates, for the purpose of sustaining them in their proper position while the cement is being fused,

"JOHN ALLEN.

"P. S. In the accompanying drawings, No. 1, represents the metallic plate, No. 2, the gum color, and No. 3, the mineral teeth,

Hiram Allen, }
Chas. D. Allen, } Witnesses.

JOHN ALLEN."

Probably the patentee now sees why I sent to the office for a copy of his claim and specification. If your readers will take the trouble to write down Steemer's recipe in one column, and Allen's in another, they will be able to judge whether Steemer's is "entirely different from Allen's as regards the compound," and whether Allen threw aside *this stuff* as useless. To prevent any further exhibit of their tergiversation on this point, I will state that the formula in the certificate of Steemer, which I now publish is identical with that deposited by E. G. Darling with Dr. P. Knowlton, and is now in his possession, and is certified to by Steemer as the recipe he sold to Allen, the (Darling's) possession of which induced Allen to enter into a partnership with him for the sale of the article, as I before mentioned in the Dec. No. of the Recorder. Remember, this was three months before the specification *could* have been obtained from the office. Perhaps this will convince even Dr. Taylor, who declared that he would not believe Steemer under oath! and yet swallows any thing Allen says. Dr. T. takes a deep interest in dental literature, and periodicals especially, and may perhaps remember that John Allen received a gold medal, &c. from the Am. Soc. Den. Surg. for "an improvement," at the meeting held in *September, 1845*; that in *December, 1845*, a patent was granted for that improvement; that the Society subsequently passed a vote of censure upon Allen for having obtained a patent, after having freely offered it to the members; and *perhaps* he can remember that in John Allen's printed "vindication and refutation" he asserts that the patent was procured *previous to the meeting of the Society in 1845, and that this fact was known to several members*. See Recorder, March, 1848. The "Records of the Patent Office" show a little more in *this* case than the gentleman bargained for perhaps. The same game was tried on the Society at its meeting in August last, and the assertion was made by Allen that "he was opposed to taking out a patent for professional improvements, and though a caveat has been filed in the patent office for this particular improvement, it might be there forever." I grant the quibble to be neat and well devised, and it did perhaps deceive some of the members, who did not know that when a patent is taken out the caveat is generally left in the archives of the office. And Dr. Taylor prefers his testimony to Steemer's. Why? Can it be because Steemer's testimony goes against *his* interest? Who can now sustain Allen's claim to originality, or say that he depends on the union of fusible cement

with a plate for fastening his teeth, when the specification shows that he depends on pieces of platina soldered to the plate. I here declare that not only has the patent been surreptitiously obtained, but that there is fraud on the face of it; and one in which the parties appear to glory, for it has been chuckled over; that even if the specification is obtained from the patent office, it cannot be used, unless instructions be got from him personally; the process being to deprive the borax of its water by calcination, mix, grind fuse, and pulverize again, and then it is ready for use. How does this agree with the oath. A person making application for a patent is obliged to swear "that he believes himself to be the first and original inventor of the compound or improvement for which he claims a patent, that he does not know or believe that the same was ever used." He must also deliver a written description of his invention, and of the manner and process of making, compounding, constructing, and using the same, in such full, clear, and exact terms, as to enable any person skilled in the art or science to which it appertains or with which it is most nearly connected, to make, use, and compound the same: that he shall explain the principle, and the several modes in which he has contemplated the application of that principle, and particularly point out that part, improvement or combination which he claims as his own, accompanied with drawings, when the case will admit of it; which description and drawings shall be signed by the inventor, and attested by two witnesses."—Pat. Law, 1836.

I am willing to grant that Allen knew nothing of the process laid down by DeLabarre, as he says that "it is fifteen years since he read Fitch." And declares that he has not time to read, in consequence of his constant devotion to the subject of improvements. But how will he get over the description, given him by Brown, of my work, which you may call an imitation of Delabarre if you choose, (except it is applicable not only in the two modes laid down by him, but in several others). Allow me to briefly describe them: mounting on platina plate by soldering wires or other pieces of platina along the alveolar ridge, (passing through the plate and riveting on the other side or not, at pleasure). In the plate thus prepared the teeth are arranged and a base filled in and enamelled, fused, and comes out of the fire finished. By soldering teeth to the platina plate by a stay of the ordinary shape, or by a wire, filling in the base and guming, covering the stay or not at pleasure.

For gold plates, by backing the teeth with platina and filling in the base as before, or without the strap supporting the teeth by another mode, and filling in the base, &c. These two modes, make *blocks* of any size, to be soldered on (the latter with gold backs) and that without carving, fitting, or any uncertainty. Full arches were made in this way and mounted by me in the early part of 1849, and which are still worn with satisfaction. The mounting may also be done by means of riveting or soldering in such a manner as to hide the mode of fastening.

Or what will he do with the Steemer affair, which may be epitomised thus: Dr. Brown told Allen of certain ends that I had accomplished in the early part of 1851; in May he hired Steemer to aid him in accomplishing those ends, and received that very material aid in a recipe of an enamel, and practical instruction in the mode of preparing that material.

This "enamel" he slightly but not essentially varies, and makes application for a patent; now, how can he, in face of all this; the principle as got from Dr. Brown, and the composition as got from Steemer; swear that he believes himself to be the first and original inventor of each thing contained in his patent? Darling's interest is manifested by his oath, and in the last number of the Recorder, is accounted for by the fact of the partnership.

The string of *testimony* arranged in the advertising pages of the Recorder, although part of the controversy between him and Steemer, deserves a passing remark. Burckhardt's testimony is met by Steemer with an utter denial of its truth, which denial is corroborated by the fact that Allen, through his agent, offered Steemer a handsome sum to sign a paper containing the gist of this affidavit. Muenters is also denied by Steemer; Darling's I have already noticed. Those of Kilby, Wheeler, and Jones, have no point in the matter, merely showing that Allen has long been *trying* to do something. Dr. J. M. Brown's note is true in its *strictest literal meaning*, but is made to give an entirely different meaning from that which the writer intended, and I accuse Allen of direct fraud in placing it before the public in such juxtaposition. I addressed a note to Dr. B., asking a few questions, after the appearance of that note, and from his answer I learn that the

job he saw was done in a manner identical with Levett's, (which Allen was using at the time,) and that he had never seen a specimen of Allen's new mode in the mouth after Dec. 15, (the date of the answer,) nor any where else, until after the 15th of Oct., (yet he is made to say he saw it two years previous in the mouth!) and that my improvement was a subject of conversation between Dr. King and other dentists in his store, and that King mentioned that my work was fastened to the plate in a manner different from that usually adopted; this conversation was held previous to Feb'y. '51.

With a view to impress your readers with a high idea of his profound erudition, and minute acquaintance with scientific works of the highest order, he arrays a complicated "table of expansions," at the heat of boiling water, and leads them to suppose that by such *scientific* research he obtained a knowledge of his compound. To gratify his vanity suppose we grant that fact, and turn to his cement and examine that *scientifically*. The problem is to find something suitable for making continuous gums for artificial dentures, the lineal expansion and contraction of which is the same as that of platina. He solved it thus: Silex, 2 oz. (exp. 1-1662); Flint glass, 2 oz. (exp. 1-1248); Wedgewood, 1 1-2 oz., composed of clay 25 parts, (exp. 1-2123); Silex, 15 parts, (exp. 1-1662); Sulphates, 63 parts, (exp. 1-1176); Spar, 15 parts, (exp. 1-1538); Asbestos 1-8 oz. or 2 drms. (exp. 1-1769); Spar 1-8 oz. or 2 drms. (exp. 1-1538); Clay, 1-16 oz. or 1 dr. (exp. 1-2123); Borax 1 oz.—The expansion of the latter he doubtless had in his calculation, but as he has omitted it I will supply it. At 212° Borax becomes a loose spongy mass from loss of its water of crystalization. A glass of Borax, the only form in which its expansion could be measured expands less than flint glass. The mean aggregate of these expansions, although they are all *less* than that of platina, which is 1-1167, must be *precisely the same*: and when "duly proportioned and properly prepared" will form a "fusible silicious cement," which, at 212° Fahr. will have the same ratio of expansion as platina.

Erudite D^r D. S.; your ability to collate a table of expansion proves your scientific acquirements beyond all cavil; and the result that you have deduced from them, shows you to be possessed of a rule in mathematics not laid down in the books nor taught in the schools. A mode of teaching arithmetic has been patented, perhaps this rule might be secured! I will vouch for its originality! I am sorry, however, for the scientific gentleman's sake, the recipe which he bought of the poor German, who could have had none of these adventitious aids to help him, is when examined scientifically, far superior to that which he *produced himself*. The only difference in those two formulas is that 1 1-8 oz. of Glass is taken from Steemer's and replaced with 1 11-16 oz. of wedgewood material, Asbestos and Kaolin, substances the expansion of which at 212° Fahr. is farther removed from that of platina than is the expansion of glass, not only that but the glass has the advantage of greater elasticity, and greater cohesive attraction.

Now let us examine by *practical* rule. Turner lays down as a general rule, two bodies rarely occupy the same space after combination as before; usually the bulk is less. This rule is particularly applicable to mineral combinations; and if Allen had ever read a treatise on the subject of combinations, he would have known that all compound substances expand and contract in a very different ratio from a mean of their aggregate, and that no rule for the expansion or contraction of a combination can be based on that of its components.

Still further to show his deep research, he says, speaking of clay, "in wedgewood ware a large proportion of this material is used," this *large* proportion varied from 25 parts in 119 to 30 in 110.

If instead of boiling water he had applied a white heat, his marble would have expanded into *lime*; the Cornish stone into an opaque body and contracted; and the sulphates wholly changed in their character, and if the resulting compound as applied to teeth had been subjected to the same it would have contracted 1-8 or more, and yet he claimed before the Am. Asso. to have overcome contraction. His object in so doing was doubtless because I had told him that I had originated a body that would *not contract* in the fire. I have in use two bodies that will receive a gum enamel without contraction, one of which will stand the highest heat of a porcelain furnace, and neither of which at their respective heats will contract sufficiently, with the proper precautions, to mar the fitting of a full arch of teeth. One is composed of Arkansite Silex, Spar, Kaolin and Alumina; the other is Silex, Spar, Asbestos, Kaolin, Potassa and Borax, and yet to say that the simple compounding of these substances in certain proportions, would accomplish the

end, would be preposterous, and still no other substances are used by me. I am not criminal in withholding the process at present, for I am not under oath. I have thus gone over that almost interminable twaddle which filled two pages of the Recorder for Feb., and shown that it has not had even the most remote bearing in his invention, and must conclude that in writing it he had honest Dogberry's ear before his eyes, that it would not "be remembered that he was an *Ass* unless it were written down."

For the specimens exhibited in 1844, at the fair of the Ohio Mechanics' Institute, I will say that he exhibited teeth mounted in the usual manner with a red substance around and between them; which was of such a consistency that Dr. Rogers sunk his thumb nail into it, and in defence Allen said, "*are not the natural gums soft also?*"

That at the same fair, Dr. Bonsell exhibited specimens of teeth mounted on Palladium; and that I exhibited specimens of block-work, and it was to meet my work that his specimens were got up; an announcement of my design to exhibit work having been published by the Institute. It is false that Dr. Taylor was one of that Committee; Dr. M. Rogers was the only dentist in it, and he was chosen by me; Dr. Warder was chosen by Dr. Bonsall and Dr. Curtis by John Allen.

It is also false that John Allen received a *premium* at that time, or any other, from the Institute, but did receive a diploma in common with Dr. Bonsall and myself. A piece of such flagrant injustice that I burned mine.

He says that the work exhibited was not perfected, and thinks with me that a public announcement of any invention should not be made until perfected. If an exhibition of a new thing at a public fair is not a public announcement, what is? I thought so when I sent my claims to the World's Fair. He further says, "my experiments have been continued from that time until I arrived at a sufficient degree of perfection to justify me in adopting it in my practice," an acknowledgement that it was a *trashy* show got up for the occasion, and that he never intended to have *adopted* it until six years after. Allowing him to have all that he claims, and even that I dispute, truly "even a fool when he holdeth his peace is counted wise; and he that shutteth his lips is *esteemed* a man of understanding." Gentlemen Doctors of the Committee, what think you of the justice of your decision *now*. Is "the pleasure of being cheated as great as to cheat?"

His private offer to pay for a gold medal, I again assert to be true, and for further proof refer to the January number of the American Journal, page 252. Does he mean to say that the recommendation of the Miss. Valley Association is higher testimonial than their gold medal; or does he mean to insinuate that the society cannot bestow one on account of its poverty? After what I have shown of his love of truth, it would be folly to raise a question of veracity between him and Dr. Leslie. In his last effusion he disclaims a knowledge of any recipes for *enamels* that possess the requisite qualities for uniting teeth and plates to form a proper denture, without cracking, scaling, or warping the plates. I never heard before that enamels would *SCALE OR CRACK PLATES*. June 20 see Steemer's Adv. he uses *enamel* and *silicious cement* as synonymous, and subsequent to that he has a patent for a use of that article in uniting teeth and plates. That is consistent! I think I see the metempsychosian in his transit. He is now making an effort to induce the profession to believe that he has what is technically called a *body*, but I think he will loose that soul and body if he persists, for the sound of my *thunder* must have convinced the profession that on that ground I stand, nor will I yield until "*choas come again*."

I have been frequently asked why I did not get a patent. I was assured by E. C. Robbins, patent agent at Washington, that if I made application for a patent previous to the granting of Allen's claim, an interference would be declared, and the patent given to him who proved priority. I did not do so because I choose rather to adhere to the principles I have profess'd, and feel that in no instance have I departed from the rules which should actuate a professional gentleman.

Allen is now about to leave the field of his former labors and has given up his office here. If he sells *patent rights* for any mode of setting teeth different from that *laid down by him in his claim and specification* he renders himself liable to an action both in the civil and criminal courts; all such assignments are, or should be recorded at the patent office for the protection of the person so buying, which is done free of cost. If the *rights* are sold unprotected by the patent, or for any of the modes laid down as mine, the purchaser has an equal right with Allen to vend the same. If this is not true I am an infringer, and liable for heavy damages, which the said Allen can recover without any cost to him whatever. He is now almost ready for a tramp through the country to peddle out

his dental patents and what not, from town to town : perhaps when time hangs heavy on his hands he will think it worth his while to commence an action for damages, if so, I am ready to meet him. I will use *any* of the modes spoken of in his article, or any other mode that has been described in any other place, and defy him to prosecute me, and any one in the profession can do the same with perfect impunity.

The voluntary tribute prepared by Professor Wood, "is *intended*," he says, "to correct any wrong impressions that may have been made by" my article in the Dec. number. The first position is, that I wished to show I "possessed the secret of Allen's method," &c. If they will read this article, perhaps they will believe that I did know something of that secret. I did not say that that recipe was the same as Allen's, but that it would make a stronger job than any other enamel known to me, at the same time knowing the composition of *his* enamel or cement, and now believe, after having seen his improved work and that of his pupil Taylor, that *English pot enamel*, properly combined with Spar will make a better piece of work than any they have yet produced. But the writer goes on to say that his (A's.) composition adheres to metallic plates and artificial teeth with a force that it is impossible for any simple enamel, or even silicious compound to acquire. Then his *composition* is not an enamel or even a *silicious* compound. That fact only goes still farther to prove the fraud in the patent office, for there he says that it is "fusible *silicious* cement."

In the same article I asserted that I would break the teeth from any plate to which they were attached by enamel alone, simply by the aid of my fingers, if the article was not too clumsy for the mouth. I of course spoke of a job of sufficient size to take hold of with my fingers, as a full arch. The term "enamel" I used as Allen did, synonymous with "fusible silicious cement." To controvert this, Allen took a piece of platina two inches in length, one end of which was turned up so as to represent the *rim* of a plate. They *neglected* to insert that he soldered a piece of platina on the inside parallel with the rim. Two teeth made ("expressly for the purpose,") set in this plate and surmounted with his composition, which was then fused in a muffle: when cooled they were unable to tear the plate and block apart with their fingers, but did break an incisor tooth in two: a pretty tooth truly, that can be broken in two from the action of the fingers, and a leverage of only half its length.

But what bearing does this have on my assertion? They declare that his composition is not an enamel or a silicious compound; I spoke of nothing else. It may go a great way as an advertisement, but why was not the "test experiment" something *resembling* work for the mouth? It certainly would have had more effect with dentists. That Drs. Wood and Mendenhall are more "sinned against than sinning" in this affair I am willing to believe; that they should attempt to uphold a brother professor is very natural, but it cannot be done at my expense. They are doubtless well qualified for the chairs which they fill in the College, but would do well to pay a little attention to mechanical dentistry as practised *outside* of the walls of the College, before they again attempt to bolster up a system of which they know nothing whatever. They "are fully convinced that Dr. Allen is the sole inventor of his method, and that it can only be excelled by the best of natural teeth!" They know that his claim was disputed, but had never seen a single specimen of my work, and yet are *fully convinced*, and so decide. Circumstances brought Dr. Wood and myself together since that article was written, and he says that he was led to believe that my style was the ordinary block work, and expressed much surprise when he saw the work which was returned to me from the World's Fair. Dr. Mendenhall has undoubtedly been deceived as grossly as Wood was, and I presume that neither was actuated by malicious motives towards me. Dr. Taylor had a description of my work from his student Dr. King, more than a year since, so he can have no such apology; as for the rest of the signers, I can only think of a parrot in comparison.

The "tribute" and affidavits altogether have been used by Allen as certain heroes described by Trumbull did the musket, which

"Though well aimed at pigeon, duck or plover,
Bore wide, and kicked its owner over."

WM. M. HUNTER.

For certificate of Chas. Steemer see page 5th of the cover.

NEW YORK DENTAL RECORDER.

Devoted to the Theory and Practice of
SURGICAL, MEDICAL, AND MECHANICAL DENTISTRY.

Vol. VI.

APRIL, 1852.

No. VII.

SOME REMARKS ON THE OPERATION OF FILLING TEETH.

The following remarks upon the operation of preparing and filling decayed teeth, are so just and true, that we are induced to copy them into the Recorder. We often meet with just such cases as are noticed by the writer, where we cannot do our duty to the patient and allow the fillings to remain in, because they never were properly done. How often are fillings seen on the grinding surfaces of the molaries when the cracks (perhaps discolored when the filling were inserted) are left radiating from the central point of decay, in each direction between the cusps. When this is the case the fillings, however well inserted, is sure, in time, to be undermined by caries, perhaps when too late to preserve the pulp of the tooth. There is a class of operators, in our city, whose names are familiar to the public, who habitually leave these seams and cracks undisturbed, though they are sure to disturb their fillings, and frequently greatly injure their reputation in consequence. As we always take pleasure in praising good work when we discover it in the mouths of patients, so we always take pains to condemn that which is badly done, and point out to the understanding of the patient the reasons for, and the signs of failure. This we do for the good of the patient and not for the injury of the operator; indeed we never enquire who has done a piece of work until we have expressed our opinion upon it and done criticising it. By this means we avoid all suspicion of being governed by either partiality or prejudice; while we clearly and fully give our opinion and the reasons for the same. If we would prevent these imperfect operations, every opportunity should be improved to point them out to all observers, both patient and the friends who accompany them, and thereby enlighten them in regard to the nature of superior work and the proper manner of performing it. By so doing we not only indirectly condemn the man who performed the unworthy operation, but help to enlighten public opinion, as a knowledge of the

cause of failure in one case often suggests the proper means of prevention afterwards.—*Ed. Rec.*

It occurs to me that a few words might be advantageously said, at this time, in relation to the necessity of using great care in the performance of this most important operation. I am led to this belief by the fact, that I so frequently find it necessary to remove fillings inserted but a short time, from the teeth of patients who come into my hands, simply because, in justice, I cannot allow them to remain. And I am assured by friends in the profession, that the same is the case in their own practice. Whilst some of them were bad fillings because the operators, from whose hands they had come, had neither the knowledge nor the skill to make them better, a great number were bad, because the necessary amount of labor had not been bestowed upon them.

It is far from being an agreeable duty to condemn the operations of a fellow practitioner; and it is quite a mistake to suppose it contributes at all, to our pecuniary interest to have bad work done by dentists practicing in the same community into which we may happen to be thrown. The bad work of others does not throw more business into our own hands, but, on the contrary, it lessens the general confidence in preservative operations upon the teeth, and thus abridges our practice. I am satisfied, that if every person who calls himself a dentist, were an upright and competent practitioner, it would greatly increase the aggregate amount of business. What person, who has looked about him, can have failed to see that the community is not half supplied with honest, competent practitioners of dental surgery. If all those who are able to pay, had as much confidence as they ought to have, and as they would have if they had not been so often grossly deceived in the resources of our useful profession, not an individual engaged in it would be able to attend to the business which he would find forcing itself upon him. As it is, there is scarcely a populous city in the country where any skillful dentist may not in a few years find his hands more than full. It is clearly, then, our interest not to disparage operations about which our opinion is asked, when they deserve commendation, but to do all we can by giving due credit to what has been done by our fellow practitioners, to add to public confidence in our profession. I have made these remarks because it might be said that the simple fact that I had removed fillings and renewed them, was no evidence that this ought to have been done, but that I might have been actuated by selfish motives in doing so.

I could say, with profit to some I hope, a great deal more than I can now find time to say, about the necessity of expending a great deal of time and labor upon this operation, and I only propose to make a few cursory remarks.

The three great defects I have generally noticed, are: the imperfect preparation of the edges of the opening of the cavity, negligence in thoroughly condensing the gold, and in perfectly finishing the surface of the filling, after it is well consolidated. These, indeed, may be con-

sidered the three great points to be observed in the performance of this operation.

It ought to be an undeviating rule never to give up the preparation for filling of a cavity, until every trace of decay near the opening is removed, and the edges made so perfectly smooth, that it will be impossible for the fluids of the mouth to find an entrance into any part of it after the filling has been inserted. The failure of this operation is often attributable, even after a great deal of care and labor have been expended on its performance, to some defect in the edges of the cavity, so slight as to escape observation. The necessity of cutting away the broken and frail edges of every cavity, till the filling can have a firm support on all sides, is generally acknowledged, and it would be well if the careful preparation of the inner edges of the cavity which are to come into contact with the filling, was as much thought of. A very good method of accomplishing this, is to use finely pulverised pumice and Scotch stone, on a piece of wood suitably formed for the purpose, and polish, as can be readily done in most cases, the parts in question.

As regards the best methods of filling teeth, and the best means of preparing and using gold for the purpose, a great deal yet remains to be done and said; and a treatise or full detail, with minute descriptions of many special operations, is certainly a desideratum. This is of course said without at all intending to disparage what has already been so well accomplished in this way.

Judging from the general carelessness apparent in the completion of fillings, otherwise well enough inserted, it would seem that its importance is not well considered. Except in the proper preparation of the cavity, there is perhaps no part of the operation upon which its durability depends so much as upon this; certainly none so well calculated to give an operator reputation both in and out of the profession. After filling a tooth well, its preservation in many cases, lies in the hands of the patient. We are, or ought to be, very careful to direct him when he leaves us, to keep the places where his teeth may have been filled, perfectly clean; how can this be done if the fillings are left rough and ragged. Many careful directions to accomplish this, have been given, particularly in Dr. Harris' "Principles and Practice," and in a series of excellent articles on the general subject of plugging teeth, published in Nos. 1, 2 and 3, of the second volume of the "Dental News Letter." These articles I would certainly advise every young practitioner carefully to read. They contain many valuable directions and suggestions.

The last object alluded to cannot be well accomplished unless a great deal of time is devoted to the operation. Some operators may be and are more expert in the use of instruments, and can, in many cases, accomplish a great deal more in a given time than others. But there are many cases of filling, which require, absolutely, a great deal of time and labor, no matter how rapidly the operator can generally proceed. To a dentist in full practice, the temptation is sometimes great, when business crowds upon him, to hurry through his operations. But no policy is worse, more dishonest, or in the end, more ruinous to the practitioner

himself, than this. In the performance of every operation, the question ought not to be, how soon can I accomplish this? or how much money can I make in the time employed? but how can I do this so as to be of most service to the patient in my hands. This is the true standard for the faithful practitioner, and for the honest man. Is it made the general standard? It may be said that the fees charged will not be remunerative, if so much time is given to each operation; if so, they ought to be increased, and it may always be done without fear of loss, for in the end, it will most certainly be found better in every way, even if a great deal less should be done, than by operating imperfectly at low charges. It is one of our duties, too, to teach people in moderate circumstances, that they are really saving money by paying a fair price for good operations upon their teeth, even if they are obliged, in order to do so, to deprive themselves of other desirable things.—R. A. *Dental Times.*

THE DENTAL PULP.

BY S. M. SHEPHERD, D. D. S.

Having noticed in the various dental publications which have fallen into my hands with the last twelve months, a very large number of communications on the subject of the dental pulp, and the different modes of treating it, when found to be exposed and diseased, and perceiving from the tenor of these communications, that some of their authors hold different opinions in relation to the nature and character of this organ, from those I have been led to adopt, I am induced also to "show mine opinion." Without attempting to give a minute physiological description of the organ, a thing which I frankly acknowledge my inability to do, I will only refer to a few of the different modes of treatment which have been adopted, or at least tried, by many whose minds have been sufficiently interested in the subject to publish their experiments, with the results. There appear to be peculiar characteristics belonging to the dental pulp, which are hard to develop. So delicate—so extremely sensitive is it, and at the same time so unhandily situated for investigation, that so far, no one has been able to lay down infallible rules for its treatment in a diseased state.

It will be recollected that less than a year ago, Dr. C. A. Harris, whose skill and whose ability, perhaps no one will doubt, published an account of his experiments for a series of years in this particular department, and he was unable to arrive at any satisfactory conclusion. The same in substance may be said of all who have written on the subject. Published cases of complete success are exceedingly rare; and

among those which have been set down, the means by which the cures were brought about are doubtful. In the first place the cure itself is doubtful.

Few operators will propose to overhaul an operation, six or twelve months after its completion, to ascertain whether the nerve is still alive; and in many cases, this is the only infallible test. It is well known to all who have much experience in dental practice, that teeth in which the nerves have been destroyed, are often found without any decided external marks of the fact, and in which no symptom has been felt that would lead, without doubt, to such a conclusion. We often meet with such teeth, which, it may be, have been filled for some years, and not having been done skillfully, the fillings require to be renewed; and we are much surprised to find the pulp cavity unoccupied by any living substance; and no symptom has been felt, so far as we can learn, that would indicate the time at which the death of the pulp occurred. It is generally remembered that the operation itself was painful, but the tooth gave little or no trouble afterwards—proving that the nerve was alive at the time when the operation was performed. It is, therefore, possible that many experiments which we have recorded in our case books as successful, if overhauled, a year or two afterwards, might be found in this condition.

In some cases, teeth that have been filled, having exposed nerves, will remain comfortable for a year or more, and then ulcerate.

There are some cases, again, in which the life and health of the pulp have been preserved after the most palpable exposure; and it is doubtful whether in any such case the most critical examination would reveal the true restorative. The most prominent case of the kind with which I have ever met, was a tooth which had been filled with an amalgam of mercury and silver. The filling had been in, perhaps, two years, and the tooth was decayed around it; on removing it, however, I found the cavity comparatively clean in the bottom; but on brushing away, with the point of an instrument, a very small portion of grayish powder from the bottom of the cavity, I found a little cell, most distinctly marked, as the termination of the pulp cavity—the pulp having withdrawn itself from contact with the metal, and a wall of bone having been thrown across for its protection. I have no idea that this tooth was treated otherwise than tolerably cleansed and the filling put in at once, in direct contact with the nerve. The exposure must have been pretty full, judging from the form of the cell; and the powder I supposed to be a portion of the metal which had been decomposed by the fluids thrown

upon it by the pulp. No one who has any correct knowledge of the material with which this was filled, could suppose for a moment that it possessed and exerted the healing power by which this wounded nerve was restored and preserved. But these facts, and facts they are, stand out; but we are unable to account for them on any principle that has yet been developed; and if some mysterious agency in the animal economy performed the cure in the case which I have cited above, as most certainly was the case, may not similar instances occur in which we suppose the credit is due to the elaborate course of treatment which we may have thought proper to adopt. The subject of exposed and diseased nerves, is necessarily one of deep interest to every dentist—one of perplexity, and at the same time of the deepest anxiety; and now that it begins to be a subject of discussion through our dental periodicals, every communication is read with the hope that something valuable may have been discovered. But, so far, disappointment predominates—nothing has been revealed that may be relied on. Vague experiments, with uncertain results constitute the whole amount of our information up to this time, upon this very interesting subject. It is not my design by this communication to discourage any who are trying experiments; for I entertain a hope, that some one will yet find the long sought elixir of life for the diseased nerve; but I frankly confess that my experiments with diseased nerves, leave me very little ground of hope that I shall be the fortunate one. Perhaps I might say, that in a *majority of cases* where actual exposure has occurred, and where no tooth-ache has intervened, I have succeeded in *preserving* the life of the nerve. In such cases it has been my custom, slightly to stimulate the exposed membrane, simply by placing a little cotton, or lint moistened with cologne, for a few minutes upon it, and then wipe dry and fill with gold in as solid a manner as possible. I have never subscribed to the doctrine of capping exposed nerves; first, because I did not believe that *pressure* from the filling was the cause of subsequent trouble. Where the opening is not so large as to render the operation of filling absolutely absurd, there will be little or no protrusion of metal, and consequently no need of any thing to prevent the pressure. Secondly, any vacuum left between the filling and wall or floor of the cavity, soon becomes a place of deposit for fluids which will be thrown out, even from the solid dentine, and much more from the exposed membrane. These fluids when thrown out of circulation, pent up as they are, soon become fetid, and necessarily detrimental to the membrane.

I am induced to believe, from my own experience and observation,

together with what seems to me sound philosophy, that actual disease in the nerve, or the elements of disease left in the cavity under the filling, is the direct cause of all failures which occur, where any hope of success may have been entertained. I believe if one half of the pulp itself could be cut away, the other half would remain alive and healthy, provided the excision could be made without the emission of blood; or if the flow of blood could be perfectly arrested and the wound healed previous to the filling of the cavity, it would be successful. But the least possible amount of blood escaping and being shut up in the cavity, soon becomes vitiated and destroys the pulp. Some writer, or writers, have proposed this mode of treatment; but the great difficulty is, the healing of the wounded nerve, so that no matter will escape from it after the filling is put in. It would require at least four or five days to heal a wound of this sort, during which time, protection from external injury would be absolutely necessary; and no *adequate protection*, that would not itself inflict injury, has as yet been discovered.

Upon the whole, it is a subject of perplexing difficulty; and I have no doubt, but that the fortunate discoverer of an effectual remedy will receive the sincere thanks of the entire profession — *Dental Times*.

WOOD ON MEDICO-DENTAL EDUCATION.

We have been much interested in a course of articles published in the Nashville Journal of Medicine and Surgery, by Dr. B. W. Wood, of Nashville, Tenn.

Dr. Wood commences by reviewing the paper of Dr. E. Gardette, "on the importance of establishing a Lecturship in Medical Colleges," published in the American Journal of Dental Science, and the reply to it by Prof. Harris, in the American Journal of Dental Science. In reference to a union of Medicine and Dentistry, Dr. Wood says: "Instead of an 'elective affinity' existing between them, although indubitably of the same family, there seems to be a double repulsive force to overcome 'ere we could expect to find them locked together in fraternal embrace." This is accounted for in the following, which we extract.

"Thus, Dental Surgery, the natural offspring of Medicine as it is, may be looked upon as virtually excluded from and independent of the family circle. Abandoned by its parent in early childhood it was compelled to shuffle along for itself. No wonder that it met with hard fare and even fell in with bad company. Still the child grew, waxed strong and comely, and as it attained more and more unto the statue and bear-

ing of its sire, so it began to attract the notice and even to elicit indications of returning affection on the part of the latter ; and had it not been for a (reputed) premature and dishonorable alliance in wedlock with a daughter of the "*Mechanic Arts*," would no doubt have been restored to the paternal roof and favor. But although by this step irretrievably disinterested, the youth, tutored to independence, and schooled to manful labor, built a house for himself, enclosed a respectable field won by his own toil, and set up business on his own account. Nor has he failed to prosper ; his household affairs are being set in order, his farm well tilled, his assistants and laborers multiplying ; and he now feels a peculiar pride in viewing his snug possessions and his fair prospects as his *own* earnings ; and especially does he feel an honest (though somewhat vulgar) dignity in considering himself beholden to no one, not even to the "*old man*." And even should the latter, influenced by importunities of "mutual friends" be induced to extend the hand of consanguinity, it is probable from the self-reliant (we had almost said deficient) spirit even now manifested, that the proffered reconciliation would be at once rejected. Such is the state of things for the present, nor is it very likely to change.—Still we would like that the two parties would live on more neighborly terms. We would like to see them exchange salutations, pay mutual visits, communicate in a friendly way, their respective plans, prospects and improvements, and even look into each others domestic and out-door affairs,—and we will venture that in so far as they will do this, will they find themselves the gainers."

Dr. Wood is not in favor of abolishing the Dental Colleges as imputed by him to Dr. Gardette, neither is he afraid with Dr. Harris of "teaching medical students a little collateral dentistry," but thinks that if some expedient could be devised by which medical students could be taught a little *more* "collateral dentistry," and dentists a little more collateral *medicine*, it would be a most salutary thing for both parties. In this we perfectly agree with Dr. Wood, and this was the aim which we had in view during the short course of lectures delivered by us at the New York Medical College last autumn. Our object and wishes being to impart a knowledge of such principles in dentistry as would assist the physician in his daily practice.

After dwelling, at some length, upon the hope which should animate every respectable dentist of one day seeing his profession elevated by the establishment of a correct and liberal standard of professional education, he says :

"It also presents urgent claims to consideration on the part of the medical profession. If medical education as a whole is worth attending to, every department of medicine, whether confined to a particular *condition* or a special *part* of the human system demands a due share of attention. Thus dental surgery would become a legitimate object of common concern. And its importance in this respect would seem to

rise in proportion to the extension of its boundaries and the consequent increase of its resources and duties. Hence its present position as an exclusive occupation, far from lessening, adds to its relative importance, to show the extensiveness and natural fertility of this province, as well as the diligence and perseverance with which it has been cultivated. That a department of medicine which less than a century ago *was not*, except as an inseparable appendage of general surgery, should so suddenly have sprung into independent existence, as a distinct profession, might of itself suffice to elicit peculiar interest in its behalf.

"But dental surgery is, moreover, the natural ally of medicine, and might be made a most efficient one, furnishing important contributions to medical science and affording valuable aid, by frequent consultation, &c., to medical practice. Besides, being a natural branch of general medicine, its condition must necessarily affect the parent trunk, to a greater or less extent; hence its proper culture, and its elevation to respect and influence, cannot but conduce to the good of the whole. Thus a judicious system of dental instruction would seem to be an object of much solicitude with every member and well-wisher of the medical profession."

Dr. Wood next goes on to inquire "what is the plan of instruction best suited to the wants of the dental profession." We have not space to follow the writer through his review of the importance of a thorough mechanical training, (which at once suggests itself to practical dentists, but which would not so readily be comprehended by his medical readers) founded upon a correct knowledge of the principles of medical science, both of which he contends are equally important to the practicing dentist. He says:

"These things being so, it is easy to see what would be the most obvious and feasible mode of obtaining a thorough dental education, so far as public instruction is concerned, (for to this we must confine our remarks.) The student would first avail himself of a course of medical instruction at a regular medical college and then go through an additional and completary course at a dental institution. This would seem to be the natural mode of teaching dental surgery since it would be teaching it *as* a legitimate and supplementary department of medicine, which it *is*. In fact this is in keeping with the usual mode of procedure in regard to all the other specialities of medicine wherever they are taught as an exclusive calling. Thus there are institutions of surgery, obstetrics, ophthalmic medicine &c., these being taught as adjunct departments of general medicine, and as supplementary to the regular course of study pursued in the ordinary medical colleges; by which mode they are connected by a natural link to the parent science. And besides, there is every indication that dental surgery will, as soon as its requirements become generally understood, be placed in the same relationship. Medical men in general are already awake to its claims as a medical science; nor need they fail to see its additional claims as an exclusive profession."

In reference to the danger of Medical Colleges graduating a class of unqualified men for the practice of dental Surgery, he says :

"This will no doubt be guarded against by the vigilance of the dental profession and the good sense of medical faculties. All who have the interest of dental surgery at heart, while contending for a thorough Medico-Dental education must be sensible of the necessity of preserving a due balance between its fundamental principles and practical details, and will deprecate and discountenance any tendency to run into extremes in either direction, to the neglect of the other.

As the mode of instruction thus pointed out appears to be a very natural one, so it is believed to be the best, since it would be the most comprehensive and thorough, and at the same time most conducive to the mutual and reciprocal interests of the dental and medical professions.

"A complete dental education could be thus, also, the easiest provided for. Medical colleges, furnished with ample means for teaching the *principles of medicine*—the true basis of the dentist's education—are already established everywhere ; so that no further trouble or expenses is needed to meet his requirements in this particular part. Now it would only be necessary to connect with such an institution an additional department for dental surgery, furnish the requisite apparatus, fixtures, &c. and appoint a faculty of dentists, in order to afford all the facilities for a thorough medico-dental education ; while the addition would redound to the advantage of the medical school proper. The cost of buildings, apparatus, &c. for the whole concern, would not be much greater than that required to establish a distinct dental college with equal advantages for an adequate course of study in this speciality alone.

"By this plan of arrangement a liberal dental education could be made accessible where it would be impossible to obtain the means for the establishment of separate institutions, and thus the profession would soon be placed upon the proper basis throughout the country generally ; an object which many years might otherwise fail to accomplish. Nor would its adoption involve anything inconsistent with the usual methods of progressive advancement in medical science. As new branches have arisen or assumed importance, additional *chairs* have been successively erected for them in medical colleges, and why not create adjunct *departments* for them as they assume the importance of specialities and come forward as exclusive callings ? Why not in fact have Medical Universities that shall furnish facilities for instruction, general and special, and thus include and foster every department of medicine ?"

After commenting on the want of any generally recognised system of dental education and reviewing the systems of private tuition under a dental practitioner—Medical instruction at the ordinary colleges,—Special lectures on Dental Surgery in Medical Colleges, and lectures and instruction in Dental Colleges, Dr. Wood submits the following plan for the consideration of his readers.

"Let schools for dental surgery be created as departments of some of the more important medical colleges in the country, being furnished with the necessary additional rooms, apparatus &c. for the full elucidation and demonstration of the theoretical and practical details of the art. Let this be under a Faculty of practical dentists, filling, say, three chairs, viz: 1st, Principles and Practice of Dental Surgery; 2d, Institutes of Dental Science, including Dental physiology, pathology and therapeutics; 3d, Operative and Mechanical Dentistry, including operations upon the teeth, preparation and scientific application of artificial teeth substitutes for lesions of the palate, &c.

"These would constitute a special course of Dental Surgery. In connection with this, let dental students be required to attend such of the lectures at the medical college as shall include the fundamental branches of medicine; such as Anatomy, Chemistry and Institutes of Medicine, together with the Principles and Practice of Surgery, or of Medicine; omitting Obstetrics, Materia Medica, Pharmacy, Jurisprudence, or such branches as might properly be regarded as specialities, or could be best dispensed with. So that lectures from, say four, of the principle chairs of the medical course should be attended. Thus a medico-dental course would comprise seven chairs—three dental and four medical. Attendance upon such a course for two full terms, with a reasonable term of pupilage under a dentist, instead of a physician, should constitute the student a proper candidate for a degree in dental surgery. Less than this should not be required even to *start* with; and the object should be to enlarge upon this so as eventually to include the full course taught in medical schools, with such extension of the dental course as the interests of the profession might demand.

"In lieu of other private tuition, the dental laboratory and infirmary of the college might be open to students during the year, under the supervision of one or more of the dental Faculty. If found to conflict with the arrangements of the medical college, or otherwise inexpedient, the special lectures in dental surgery might be given as a *summer course*."

The necessity and general advantages of some mode of instruction like the above, may be considered more in full upon a future occasion.

EPULIS.

The maxillæ are not exempt from extraneous growths, but they are rarely the seat of malignant tumors. Epulis, *epi oulon*, an hypertrophy of the gum, is the accidental formation to which the jaw is most liable. The tumor displaces the teeth between which it commences, or involves by its extension two or three of the contiguous teeth. The growth at first is indolent and devoid of pain, and increases very slowly. While small it is not liable to hæmorrhage, and gives no inconvenience but from its untoward position; but its increase is not limited, and it may attain an enormous size. When long standing and of

great extent, it may become the seat of noisome ulceration or of malignant disease. Its thorough extirpation should not be delayed.

A rare example of this tumor occurred in the case of a colored woman otherwise of sound health and free from constitutional or hereditary disease. It was situated upon the symphysis of the lower jaw, and at the time of removal had attained a size somewhat exceeding a walnut. The pedicle of attachment was smaller than the tumor, and its substance overspread several of the adjoining teeth. It was deemed prudent in its excision not only to denude the bone, but to remove a portion of the alveolar process. To accomplish this neatly and expeditiously, a pair of bone forceps of a peculiar form were designed, having the cutting part so constructed as to operate a horizontal direction, making the plane of the incision at right angles with the shaft of the instrument. The removal of a tooth at each extremity of the tumor was followed by two vertical incisions, and the entire growth was removed with but little loss of blood. On inspection, the apodosis justified the protasis. The substance of the excrescence was of a dark pink color and fibrous texture, arranged, unlike scirrhus, in curvilinear lamellæ, similar to the coagula of aneurism. It probably contained a large proportion of albumen highly charged with water, shown by its shrinking and corrugation on immersion in alcohol. A cursory examination detected none of the granular matter of cancer, and the arrangement of the stromal layers classified it among the simple non-malignant sarcomatous, or fibrous tumors. Considerable time has elapsed, with no return of the formation and no production of the disease in another shape; these circumstances, with the absence of any constitutional contaminated diathesis, and its exceeding slow increase, make it quite certain that the growth was of the homologous kind—the counterpart of healthy and natural textures.

Transcendental anatomy alone can afford anything approaching an explanation for the departure from established morphological laws, and the usual structure and constituency of normal accretions. To call an adventitious growth a lesion of nutrition, or perverted nutrition, approaches in no degree the primal cause.

A circumstance worthy of remark in this case, was the unusually irritating effect of the vapor of ether upon the respiratory apparatus. The reflex influence of the par vagum, by means of its pulmonary plexus, upon the laryngeal branches, produced spasmodic contraction of the glottis to such an extent as to suspend respiration and frustrate anæsthetic inhalation. Sometimes failure arises from too sparing administration of ether. A more liberal application will overcome the disagreeable

symptoms, and tranquillize the suffocative spasms. Imperfect etherization produced the usual fantastic effects of partial intoxication rapidly induced. The motor centres, released from the control of reason, uttered unconscionable and antagonistic mandates which the members found difficult to execute and accomplish; and these bizarre impulses threw the fleshy tabernacle into singular and notable contortions. While the cerebrum "all as frantic, which some believe the soul's frail dwelling place, did, by the idle comments that it made," indicate, in prating lunacy, some most curious traits of the African race and blood.

February 13th, 1852.

E. SANFORD.

Bost. Med. and Surg. Jour.



SPRINGING OF FULL UPPER PLATES IN SOLDERING.

BY T. L. BUCKINGHAM, M. D., DENTIST.

This is a subject of vast importance to the dentist, for I don't know of a more trying thing than to make a piece of artificial work, and finish it up nicely; and when we think our work is all done, to try it in the mouth and find it does not fit; and the work must all be done over again; and not only to have the work to do over, but to know that no matter how much pains we may take with the case hereafter, we can never make as nice a job of it again. This is as much, I think, as an ordinary man can bear, without giving some vent to his feelings. But this is not all the difficulty, for he has the satisfaction of knowing that the same thing may happen again, and from the same cause, namely, the springing of the plate in soldering the teeth on.

If we had but one job to spring in a great many, we might think it was caused by some oversight; but when they nearly all spring, and there is only one in a great many that does not, we must conclude there is some real cause for it. Now, there are two things to be found out, viz:—the cause for the springing, and some mode to prevent it.

The cause of plates springing, some have thought arose from the alloy in the gold; others from the plate not being properly annealed before the teeth are soldered on; and others from the plate being unequally heated while soldering. All these may have something to do with the plate getting out of shape, but I don't think they are the real cause of all the trouble. The alloy in the gold does make the plate stiff and elastic, and hard to swedge up to the cast properly; but, if the

alloy has been thoroughly mixed with the gold, it can have no other effect on it.

The annealing, I have no doubt, may have something to do with springing, if the plate has not been frequently annealed while being swedged up. Some parts of the plate may be driven down to their places, and they may draw or spring others with them, so as to make the plate fit the cast tolerably well; but the different parts of the plate are not at rest; some parts have a tendency to fly back to their original position while the others hold them in their places. Now, if heat be applied, and some parts of the plate heated more than others, the cold parts of the plate being stiffer and more elastic than the hot, would naturally draw the plate out of shape. But this could happen but once, for, after the plate has been thoroughly annealed, the parts would have no tendency to change, unless it should be heated so hot as to allow it to swage down by its own weight. That not being properly annealed is not the great cause of our difficulty, I am very well satisfied, for I have been in the habit, for a long time past, of soldering a wire around the edge of the plate. It not only makes the plate stiffer, and the edge thicker, but it makes a shoulder for the teeth to butt against, when gum teeth are mounted. It also gives additional strength to the teeth, by taking part of the strain off the pins, and makes a much smoother job.

To put this wire around, I clamp it to some part of the edge of the plate with an iron clamp, then solder it fast at that point; I then bind it around the edge as far as I can make it fit close to the plate, clamp it, and solder it again, and so repeat until the wire is soldered at different points around the edge. I now lay solder on the places between these points, and solder the wire fast all around. I sometimes have to heat my plate as often as eight or ten times, and always at least five or six times, and yet I very seldom have the plate to spring; and, if it does spring any, it is very little—nothing like what the same plate will spring afterwards, when the teeth are soldered on. I never take any care in heating my plate, to have all parts of it heated to the same degree, but I heat the point where the solder is to flow hot enough to melt the solder, while the other parts of the plate are comparatively cold, then dip it immediately into cold water, to cool it. The only precaution I do take is, not to heat the plate hot enough to allow it to swage down by its own weight. Now, if a plate will stand all this heating and cooling, without getting out of shape, I think we should look for some other cause for the subsequent springing than the annealing, or the alloy in the gold.

I have been of the opinion, for a long time, that the plaster we use

to hold the teeth in their places, while we are soldering them to the plate, is the cause of nearly all this springing, and I will briefly state my reasons for thinking so.

We know very well that plaster and all similar substances, when mixed with water, will contract when heated. There is always a large quantity of water that is mixed with the plaster, that will not combine with it chemically, this is evaporated at a low heat: then there is one pound of water to every four pounds of plaster that enters into a state of crystallization; this is also driven off at a less heat than it takes to solder a set of teeth: the loss of the water causes the plaster to contract. This is evident from the fissures that are made in the plaster by heating it. If the plaster expanded, those fissures would be closed while the plaster was hot, and only show themselves when it became cold; but they are made by heating, and we find it necessary, to keep the teeth from being drawn out of their places, to tie the plaster together by putting pieces of wire in it when we put it around the teeth, and also mixing it with sand, the wire and the sand will keep it from cracking, but they will not prevent it from shrinking.

The teeth themselves, although they will not contract while soldering, do not expand in any thing like the same proportion the plate does.

Now let us examine the manner of arranging the teeth on the plate, and the mode adopted to hold them to be soldered. We place the teeth around on the outside of the arch of the plate in close contact with each other, if they are gum teeth, and these are the only kind we have any trouble with, (I never have any difficulty about getting a plate to its original shape if the teeth do not touch each other,) then run plaster around them to hold them in their places. We now apply heat to solder them, the plate expands and the arch is enlarged very much; the teeth do not expand, or if they do it is very little; the plaster contracts and draws the teeth closer together if possible, and while the heat is the greatest, the teeth are made fast to the plate; the proportion between the teeth and the arch of the plate is much greater when they are hot than when they are cold, consequently the teeth occupy a less portion of the arch when the job is hot than when it is cold. Now what is the change that takes place in cooling. The plate expands a great deal and it also contracts as much, for the expansion and contraction is always equal and in the same limits, but in reverse directions when there is nothing to interfere. The teeth are as close together as they can be, and will not allow the plate to contract to the same degree in which it expanded, and the only way the arch of the circle can be made as large

when it is cold as it was when it was hot, is by the ends of the plate coming together, and this is the only way I have my plates to spring. That the teeth are drawn together by cooling is evident, from the chipping or scaling off of the gum when they have been ground so as only to allow the edges of the gums to touch, and it sometimes happens that the teeth themselves will be broken by the lateral pressure ; this often happens if we attempt to pull the ends of the plate apart.

Now that I have attempted to explain the cause of plates springing, I suppose I should endeavor to show some mode to prevent it. But I am not able at present to give any plan that will effectually overcome the difficulty. If some Dentist will make known some certain remedy, he will confer a great benefit on the profession.

The precautions I take to prevent the plate from springing, are first, I mix a large portion of sand with the plaster, not that the sand will keep the plaster from shrinking, but it keeps it from breaking and drawing out of place ; next I take a piece of thick iron wire, as thick as a large goose quill, and bend it so that it will lay in the cavity of the plate on the palatine surface. This was recommended to me by an eminent dentist of this city. I don't know who first adopted it, but since I have heard of it I have used it ; it can do no harm, and I have thought sometimes it does a great deal of good. If it acts at all, it must be by the ends being forced apart by the expansion of the metal, and may carry the ends of the plate with them ; this will allow the ends of the plate to approach each other in cooling, and yet still retain its original shape ; if it does no other good, it makes a firm foundation for the plate to rest upon. This wire is laid in the cavity of the plate, which is then filled up with plaster.

I also, after I have ground and arranged the teeth on the plate, take them off and paste a piece of common writing paper on the sides where they touch each other, so as to have one thickness of paper in each joint. This paper all burns out and the space I find closes after the teeth are soldered. It does, in a great measure, prevent the scaling of the gum, which, in some cases, is almost as bad as the springing of the plate.

These are the only precautions I now take. I have tried every thing that I have thought or heard of, and have abandoned them all except the above. My plates spring some, but I generally manage to get them back so as to fit tolerably well. I very seldom have to make a job over on account of the plates springing. To get them back to their shape, I place them on the plaster cast, hold them firm and use a hammer that weighs about an ounce, a few smart blows are all that is necessary. If

this don't do, I make a lead cast, as recommended by a writer in the News Letter; but I only make my cast to cover the plate on the inside of the teeth, without touching the stays, then place the job on the zinc cast, and a smart blow with a heavy hammer generally brings it back to fit pretty well.—*News Letter*.



For the Dental Recorder.

FITTING CLASPS.

MESSRS. EDITORS:—The mode of fitting clasps to teeth, and of fitting the plate to clasps, which I have practised for four or five years past is as follows:—I think it the best, but almost every dentist supposes his mode of operating preferable to any other, especially if of his own invention.

Be careful to have the teeth to which the clasps are to be applied perfect as possible on the metal cast. Fit the clasps to them. Then try them on the teeth in the mouths, and fit them *accurately* by bending with the different pliers necessary for this purpose, and closely enough to hold them firmly *in situ*. Cut the plate sufficiently wide to bend it up where it is to be soldered to the clasps so as to cover half their width or more. Strike it up, and file the parts to join the clasps making the edge very thin. Put it in the mouth and bend with pliers to fit nicely to the clasps. I mark them precisely as described by Dr. Allport in the Feb. No. of the Recorder. I then fasten the plate to the plaster cast with wire, and wedge the clasps by pressing tacks, if necessary, to keep them in place, between them and the teeth; when they are ready to solder.

I think bending the plate so as partly to cover the clasps facilitates the fitting, and makes the work stronger, as well as better looking generally, than when done in the usual manner.

A. BERRY, D. D. S.

Raymond, Miss. *March 13th*, 1852.



DEATH FROM THE USE OF CHLOROFORM.

Mrs. Emily Norton, a highly respectable lady residing in this town, came to her death by the use of chloroform, on Saturday April 10th, under the following circumstances.

She had been troubled for a year past, with a painful abscess of the right inferior maxillary, produced by the fangs of a diseased molar tooth.

The tooth, had been broken off, in an effort to extract it, about a year

since and the fangs were suffered to remain. On Saturday the 10th of April, while on a visit to New Haven, she called upon her former Medical adviser, Dr. E. A. Park, and requested him to administer chloroform to her, and remove the tooth. She had taken chloroform about a year previous from the hands of Dr. Park, who had unfortunately broken this tooth, in his attempt to extract it.

She was allowed to inhale the chloroform in very small quantity for a few moments, and almost at the same instant she was saying she felt no effect from it, and was asking for more, the Doctor noticed the pulse suddenly to fail. And within a few moments from the time this change was observed, all signs of life were gone, and the most prompt, and vigorous efforts to resuscitate her, proved unavailing.

The patient was 24 years of age—and of a scrofulus diathesis, and up to the time of her decease, was nursing an infant, now 7 months old.

At the Coroner's examination in the afternoon, a number of witnesses were examined, who testified that but half a drachm of chloroform was used, which was applied by inhaling from a sponge moistened with it. Drs. Night, Foot, Hooker, Jewett, N. B. Jones, Tyler, and Wheat, testified, that more than ordinary care had been used in administering the chloroform, and that they should not have anticipated a fatal result from it, in a similar case.

The verdict of the Jury, is in accordance with the above, and that "there was no want of medical or surgical skill, on the part of Dr. Park"

We have been informed by the husband of the deceased, that the means so successfully used, and so strongly recommended by M. Ricord, (a French writer) was resorted to by Dr. Park, but with no success. viz., *insufflation* by the mouth, as also, other, and various means.

Thus, is added another, to the list of fatal cases resulting from the use of this powerful, and dangerous anæsthetic agent.

Individually, we have used it three times only—and the third trial was productive of such alarming effects, although not fatal, that we have steadily abjured its employment as an anæsthetic, from that time, to the present. We have used ether, perhaps, a hundred times, and we have yet to learn the first instance where death, has immediately resulted from its use anywhere.

And we can see no good reason why an agent so doubtful, and uncertain, as chloroform, should be substituted, for ether, when the latter, is equally effective, and a thousand times more safe.

The fact, that death sometimes occurs under circumstances so appalling, to the operator, is scarcely balanced by an extended list of cases,

where no such result has transpired, more especially, as we *are not confined to chloroform*, as an anæsthetic.

At all events, nothing short of a *capital* operation in surgery, can in our opinion, justify its administration.—*Norwalk Ed.*



IRREGULARITY OF THE WISDOM TEETH.

The molares are seldom misplaced except the third or wise teeth. Probably the reason why irregularities occur so much less frequently in these teeth than in those in the anterior part of the mouth, is that there are no teeth to interfere with their growth and they are never cramped for want of room, except the wisdom teeth in the lower jaw, but as soon as sufficient space is developed, by the natural growth of the jaw, these teeth successively rise to fill it. An exception to this general rule arises when the second temporary molaris has been extracted two or three years before the time for the eruption of the first molaris. In such a case this tooth frequently comes in too far forward and inclining towards the front of the mouth, thereby contracting the space designed for the teeth of replacement, and causing many of the frightful and troublesome cases of irregularity so frequently met with since dentistry become so fashionable in this country.

Mr. Tomes divides the irregularities of the wisdom teeth into five different varieties.

1st. when they grow obliquely forward with their masticating surface towards the posterior surface of the second molaris.

2nd. When the crown is directed outward towards the cheek and may be imbedded in the cheek.

3rd. When it takes an internal direction towards the tongue.

4th. When it is directed upwards in the coronoid process of the inferior maxilla and may be wholly or partially imbedded in the bone.

5th. When its full development in the jaw is prevented by indurated gum.

To these we may add a 6th. which is more common than any or all of them together. It is when the upper wisdom tooth is developed first, or when both grow together so as to produce a contusion of the superimposed gum.

Difficult dentition of the wisdom teeth from any of the above causes is often very troublesome and in some cases dangerous. Considerable inflammation is induced which extends to the joint and produces rigidity of the muscles swelling of the throat with painful deglutition and if the

tooth be impacted in the jaw by growing against the coronoid process or the second molaris ulceration often occurs which may open directly into the mouth or discharge through the cheek until the cause is removed. Ulceration of the cheek or the side of the tongue near its base may also be produced when the crowns are directed outwards and imbedded in the cheek, or in towards the tongue.

The following cases related by Velpeau we have copied from the work of Mr. Tomes because they forcibly illustrate the kind of disease which frequently results from a malposition of a wisdom tooth. •

CASE 1st. A lady at the age of twenty-two, began to feel a dull pain in the angle of the lower jaw on the left side of the face, the pain soon extended to the adjoining teeth, but was distinct from toothache. As the pain continued to increase in intensity for several months it was thought to be a case of rheumatism, and as such was treated, but without good effect; then blisters and a seaton at the back of neck, kept open for a month, were tried, and opiates were given, but all to no purpose. She went and resided at a watering place for some time, but came back to Paris nothing benefited. At this time the teeth were all good in appearance, the gums healthy, and nothing denoted the eruption of a wise tooth. However, upon making a section into the gum, over the wise tooth, a probe passed down led to the discovery that the wise tooth was arrested in its progress by the direction it had taken, directly forwards, its crown coming in contact with the posterior surface of the second molar. The second molar was extracted and the patient immediately relieved from her suffering."

A case similar to this is related by Prof. Harris, which occurred in the under jaw.

CASE 2nd. "A lady, 29 years of age, sought advice on account of a painful tumor in the cheek; it had existed for several months. On examination it was found to arise from the wise tooth, projecting horizontally outwards, and lodging in the parieties of the cheek. So soon as the mouth could be opened sufficiently wide, the tooth was extracted and the patient quickly recovered."

CASE 3rd. "A gentleman 45 years of age, had suffered from an ulcer on the side of the tongue, near its base. This ulcer he conceived to be syphilitic, and so was salivated as a means of cure. The salivation, however, made it much worse. After a while, on application to Nelpeau, it was found that the wise tooth on that side was directed inwards, and projecting into the mouth, had occasioned the ulcer on the tongue; the tooth was extracted, and in a few days the ulcer healed."

A case is also given in Mr. Liston's lectures, which occurred in the practice of Mr. Nasmyth of Edinburgh. "A patient applied to him with an extensive abscess in the cheek, and great swelling of the face and jaw, the abscess extended down to the clavicle. His mouth could not be opened, for the inflammation had locked the jaw, and the patient ultimately died. On a post mortem examination it was found that the cause of the whole mischief was the wisdom-tooth growing forward and lying horizontally instead of perpendicularly. This is a rare case, but it shows that much mischief and serious consequences may arise from cases of this kind.

There are many cases in which these teeth are irregularly developed in which no serious disturbance or inconvenience is manifested ; but in a peculiar diathesis where there is no great nervous susceptibility, a predisposition to inflammatory action, or to scrofulous affections, very severe effects may result from mal-positions of the wisdom teeth.

In those cases where the development of the tooth is arrested by indurated gum the gum should be freely divided with a lancet which will give immediate relief.

When contusion of the gum is caused by closing the teeth, it often produces severe inflammation, especially when the patient has been exposed to any sudden change of temperature. The inflammation often extends to the glands of the throat, producing great soreness and swelling with such rigidity of the muscles of the jaw that it is with the greatest difficulty that the mouth can be opened sufficiently to examine the affected parts. The proper remedy in these cases is to excise the whole of the gum which lies upon the masticating surface of the tooth ; but if the upper wisdom tooth is not important for mastication, on account of the other molares being wanting, a milder and more effectual operation will be to extract it, which gives immediate relief.

In any case of inflammation arising from malposition of a wisdom tooth, the best practice will be to extract if possible the offending tooth as this will be useless for mastication even after the inflammation has been subdued by removing the adjoining molaris. When the crown of the tooth is directed towards the posterior surface of the second molaris and deeply placed in the alveolus, or when it is embedded in the coronoid process, this may be difficult, but with suitable instruments, in almost all cases, it may be extracted. In one case which came under our care the jaws were so locked that the wisdom tooth could not be reached and we were obliged to extract the second molaris which soon gave relief.

The operation of extracting a wisdom tooth is generally accomplished without difficulty.

In the upper jaw, standing as it does at the extremity of the alveolar process in the tuberosity of the bone, it is less protected by the alveolar process and, except when very badly decayed, can be removed easier than any molar tooth in the mouth; but in the lower jaw it is frequently closely impacted between the second molaris and the coronoid process of the inferior maxillary. The fangs are also sometimes unproportioned being large and turned backwards, frequently forming a right angle with the axis of the crown.

If to these difficulties we add a dense osseous structure and strong fibrous texture it will readily be perceived that without a well adjusted instrument and great care in the use of it these teeth will be very liable to be fractured at the neck in the attempt to extract them. The following case occurred in our practice a few months since.

A gentleman in the country had been long troubled with occasional pains in an irregular wisdom tooth in the lower jaw. The crown of the tooth stood obliquely in the mouth pressing against the posterior surface of the second molaris. The pain at length became settled and constant and was accompanied by soreness and severe swelling of the cheek.

At this stage he applied to his family physician, who, in attempting to extract it, with a turn key, unfortunately fractured it at the neck and so low down that he could not apply his hook again. When we saw the case the inflammation and swelling had extended to the gums, the tonsils, and the muscles and integuments of the face and neck. There was also great difficulty in swallowing. Accompanying these symptoms there was high fever, tongue fured, skin dry and hot, pulse frequent and wiry, and great pain and restlessness. Fomentations had been applied to the face and neck on the affected side, and blood letting and cathartics had been employed, but to no purpose. The muscles had become so rigid that the jaws could not be opened more than half an inch in front. By the aid of a small block, placed upon the first lower molaris, on the side opposite the diseased tooth, and with a thin hickory lever the jaws were forced apart far enough to allow of the introduction of a pair of Physics forceps, by which the fangs were so elevated that they could easily be removed with a pair of small forceps. As soon as the fangs were raised there was a copious discharge of pus. The operation was performed toward evening and the next morning the swelling had

very much subsided, the stiffness of the muscles was nearly gone and the patient ate his breakfast with a tolerable appetite.

It is inexcusable carelessness when a dentist fractures a tooth through the sound part in attempting to extract it, unless it be the first or second time in his practice. It may be necessary to break a few teeth in the commencement of our operations, in order to learn their strength; but after obtaining that knowledge there is no excuse for ever breaking a tooth, except when it is so much decayed that the remaining strength cannot be correctly estimated. No more power should ever be expended upon a tooth than it is capable of sustaining without fracture, and to what purpose have we practiced for years if our experience has not taught us to avoid such gross carelessness? In these difficult cases if sufficient time is taken and the tooth is wrenched and turned in every direction long enough it will finally loosen in the socket so that it can be removed without fracture. If the patient will not stand this wherein is he benefitted by having his tooth fractured at the neck and the fangs left remaining in the socket?

If a lower wisdom tooth cannot be extracted because the pain inflicted is so great that the patient cannot bear it, it is better to administer an anæsthetic or suffer it to remain whole until the pain from the disease is greater than that arising from the operation, and the patient will then choose the least of two evils, and the operation will merit and receive his gratitude for giving relief, but if he fractures the tooth, he merits and receives only his anathemas.

TOOTH SOAP.

Dr. S. S. Blodgett, of Ogdensburgh, has sent us several specimens of tooth soap consisting of a combination of soap and tooth powder, for the purpose of cleaning the teeth, purifying the mouth, and preserving the health of the gums.

The microscopic investigations of Dr. H. J. Bowdich and other scientific men, show that the teeth of nearly every person are infected with numerous animal and vegetable parasites, which are not destroyed by the brush, even when aided by ordinary tooth powders.

Now, whether these parasites are the insects which form the accretion commonly called tartar, or *salivary calculus*, as a certain species of zoophytes form the submarine coral—as was long since contended by a French philosopher who discovered the skeletons of innumerable

anamalculæ in the concretions about the teeth,—or whether, as is more rational to suppose, they are the result of animal and vegetable putrefaction in the mouth, from a want of proper cleanliness, soap has been found by Dr. Bowdich to be the only substance capable of effectually destroying them. Every tooth powder should therefore have combined with it a due proportion of purified soap.

The article prepared by Dr. Blodgett we should think would answer a valuable purpose in keeping the mouth and teeth in a proper state of cleanliness.



THE DENTAL COLLEGES,

If we may credit all the accounts which we hear, the Colleges of Dental Surgery have done better during the past season than ever before. The graduating class at Baltimore numbered twelve, which is five less than graduated the year before; but on the other hand the Ohio College has had a larger class than usual—owing probably to the accession of Dr. John Allen to the faculty—The New York College, at Syracuse has also made a successful beginning and now has her sails fairly set for honorable competition with the south and west. This College is well situated, and easy of access to all parts of the Union and Canada being on one of the greatest thoroughfares in the country;—it has a convenient College building and an able faculty and will, we have no doubt soon be a very popular institution. We bespeak for it the attention of all dental students.

In the absence of all instruction upon the diseases and treatment of the teeth in our medical Colleges there is need enough of schools to teach this speciality and we hope to see them all successful.

The Baltimore College held its commencement in February, when the following young men received the degree of Doctor of Dental Surgery, viz: Thos. D. Simonton, of Pa.; Adelbert J. Volck, Germany; Henry Stevens, Connecticut; Francis E. Clontier, La.; John A. Cobbs, Va.; Richard F. Finch, Va.; P. Henry McCargo, Va.; Albert A. Cleaveland, Md.; Warren Walsh, Md.; Thos. E. Chapin, Mass; Stanhope A. Sudderth, N. C.; George Mears, Pa.

After the conferring of the degrees Dr. Robert Arthur, the oldest graduate of the institution, delivered the valedictory address which was listened to with attention by a mixed audience of ladies and gentlemen.

NEW YORK DENTAL RECORDER.

Devoted to the Theory and Practice of

SURGICAL, MEDICAL, AND MECHANICAL DENTISTRY.

Vol. VI.

MAY, 1852.

No. VIII.

OSSEOUS DEVELOPMENT AND NUTRITION, LESIONS THEREOF, WITH SOME SUGGESTIONS FOR THEIR MORE PERFECT CORRECTION.

BY GEO. J. ZIEGLER, M. D.

[Communicated for the Boston Medical and Surgical Journal.]

As a knowledge of the materials and normal processes, or those from and by which nature originally constructs parts and organisms, is absolutely essential to the perfect comprehension of those deviations from the natural or healthy standard, which are so frequently occurring in the process of development, nutrition, and restoration of the tissues of the individuals of the animate world; and particularly, in consequence of their greater complexity, in that higher class of them, the animal, and man especially, and circumstances having directed my attention more particularly to one of these latter, viz., the osseous structure, I have been thus led, from a general consideration of its anatomical and physiological characteristics, its pathological aberrations, and the therapeutical measures usually employed for their rectification, to the conclusion that there are certain indispensable points and fundamental principles, generally overlooked or entirely neglected, in the endeavor to thus modify and correct such. And as it is desirable that all things promising in the least to the more successful accomplishment of these objects should be known, and believing it to be the duty of every man to present such things as may seem to him correct and practically useful; I have therefore concluded to place the few subjoined ideas upon the subject before the profession in their present crude form, especially as individual opportunities for testing practically, and sufficiently extensively, any particular views which may be ascertained, are comparatively limited. By the experience and observation, however, of many persons, a mass of testimony may be collected in a comparatively short space of time, sufficient either to demonstrate more fully the truth, and prove the value, or exhibit more clearly the deficiencies, of any peculiar views or practice advanced, which could not possibly be acquired or collected from

personal observation and experience in the life time of a single individual; and hence, in consequence of individual opportunities being thus necessarily limited, the more frequent adoption of the course herein attempted of reasoning from known facts and principles, and endeavoring to deduce therefrom other principles practically applicable, would, it is believed, not only more rapidly advance the interests of science generally, but more speedily and permanently secure the means essential to the prevention and correction of those numerous and frequently dangerous derangements incident to this existence; some of those to be subsequently noticed being so exceedingly difficult to successfully remedy, as to defy all the present known methods of treatment. Therefore, as the more positive accomplishment of such objects still remains a desideratum of the highest importance, it is hoped that the desire to assist in supplying this will be considered an ample apology for the presentation of the following crude observations.

For the more perfect comprehension, therefore, of the peculiar organic deficiencies upon which the failures and deviations of the constructive, nutritive and restorative osseous processes depend, and the circumstances which often interfere with their regularity or entirely check and control them, it will be proper briefly to consider, first, the mode by which the osseous tissue is originally constructed; secondly, that by which it is nourished; and, thirdly, that by which it is restored. In the construction of this tissue there are, as is well known, three distinct stages, viz., first, the mucous or pulpy; second the cartilaginous; and, third, the osseous. In the progress of the mutations essential to the perfection of the respective processes of conversion, the regularity and co-ordination of the stages, and finally the completion of the ossific structure, there are certain indispensable conditions and requirements necessary, and phenomena presented, a correct appreciation of which will doubtless afford an insight, and a knowledge of the causes of the imperfections and failures of the organizable and conservative efforts, and thus assist in pointing out the deficiencies of the present means and modes employed for correcting such aberrations, thereby disclosing more positively the measures to be adopted for the successful induction of the now too often inefficient, and abortive normal action.

For the perfection of this, as well as all other organic processes, and their incidental or necessary mutations, it is evident that there must be, first, material, possessing peculiar properties; second, power to act on it; third, stimulus or sustenance for the excitation and support of this

power, &c.; or, to resort to and continue the analogy of Dr. Ira Warren, which, by-the-by, is one that, in conversation, I have often drawn when illustrating the functions of organic and animal life, their differences, mutual relations and dependencies, viz., there is, and must be, first, the material or crude matter, in the form of earth or food, composed of certain elements and possessing peculiar properties rendering them susceptible of certain modifications; these are prepared and worked up by the makers* on the one hand, and the nutritive organs on the other. Second, for these purposes it is necessary to presuppose the previous existence of these forces to mould and modify such materials into proper forms or states for further changes and more ultimate purposes. Third, the conveyance of such prepared material to its proper destination, or the point requiring construction or repair, by the usual physical modes on the one side, and the more immediate vital or physico-vital on the other, through the absorbents, general circulation and capillaries; the greater tendency or flow, according to the exigencies of the case, being concentrated for that purpose. Fourth, the construction of the edifice, tissue or organism, in the appropriation and deposition of these materials, by the layers or cells. Fifth, the stimulating and sustaining power or force, by the usual physical and vital stimuli, and sometimes, when these efforts or processes become languid or inefficient from physical or vital inability, or otherwise, requiring augmentation, it is necessary to arouse and excite more efficient and additional effort by increased inducements or direct stimuli and improvement of the general vital energies, with greater concentration of material and action.

The more minute shades of resemblance between these physical and organic processes will be readily traced, the general outline being sufficient for our present purposes.

All of these minor processes are of course subservient to the accomplishment of the plan or projection of the original architect or designer, to a certain extent under the control or influence of the superintendent, or nervous system and vital force, which direct more especially the concentration and proportion of material and force required. In vegetables, however, in which there is no nervous system, construction and restoration are effected, also, through these physico-vital agencies and cell action, directly under the influence of the *vis vitæ*, according to the impulse and laws given and instituted by the great originator and designer.

This simile is merely brought forward to exhibit more conclusively the

* Brick-makers.

pertinency of the following observations ; and though the subject which it is intended to illustrate is somewhat trite, yet it is believed that the principles therein indicated, notwithstanding their full acknowledgment and recognition, are not extended sufficiently in their general application to the treatment of deranged organic action.

But, in continuation of the more special consideration of our subject, we will now cursorily glance at normal nutrition, leaving that of restoration for a subsequent period. In this the materials for nutrient purposes, and those for the completion of undeveloped tissues, are generally very abundant, the waste being greatly disproportionate to the supply, there being also a due proportion between the quantity of the animal and earthy matters respectively, according to the requirements and exigencies of the particular period of life, varying, as the demand for the greater or less proportion of one or the other preponderates. Thus it is well known, that in infancy the former is in proportionate greater abundance, not only for the more perfect extension and growth of the bones, by furnishing a plasma or bed into which the latter may be deposited, but also to supply the necessarily-increased demand for general nutrition and growth. As the osseous structure advances, however, towards completion, there is a more decided approximation, and closer equality, between its components and the supply and waste ; and subsequently, as age increases, the excess of the calcareous matter gradually becomes proportionately greater ; and in old age, in consequence of this abundance of the inorganic constituents, the bones become more consolidated and brittle, and necessarily more liable to fracture, because they are not only deprived, to a certain extent, of the inter-cellular tissue, but also of the lubricating and nutrient oleaginous and gelatinous principles with which they have been so abundantly saturated and supplied.

These superficial and cursory notices of the normal mutations, are intended as a slight retrospect to enable us to arrive at a more definite comprehension of the deficiencies and derangements upon which the failures of the constructive, nutritive and restorative processes of the osseous structure depend ; therefore it will now be in order and requisite, first, to consider these deficiencies and derangements, their character and complications ; and, second, to endeavor to deduce therefrom the principles upon which they should be treated to prove successful.

To determine these more positively, it is obviously requisite to inquire into that general diathesis and special deficiencies of system, and

peculiar circumstances, influencing the inception, and regulating the intensity of the aberration from the normal standard.

The general diathesis is that in which the original physical conformation is imperfect or feeble, and the organic functions necessarily slow and of a low grade; or an acquired cachexia, with a depravation of the higher qualities of the fluids, tissues, &c.

The special deficiencies may be stated in the following propositions; viz., first, there may be an insufficiency of plasma to supply the material for the mucous or pulpy deposition, out of which the cartilaginous structure is to be formed, and in which the osseous matter is to be deposited. Second, an abundance of the plasmatic material and deposit, but a failure of the cartilaginous change or modification, or privation of the second stage. Third, sufficiency of both the organic and inorganic materials, and perfection of the cartilaginous conversion, but a failure of calcareous deposition in the receptacle thus provided; or arrest in the second stage. Fourth, cartilagization perfect, but an insufficiency of calcareous matter; or privation of the final stage of ossification. Fifth, an insufficiency of both plasmatic and calcareous matter, hence imperfect effort at osseous organization, and consequently defective structure. Sixth, sufficiency of both plasma and lime but unequal general distribution, and power of appropriation, from irregular or depraved organic action, hence failure of construction of some general part of the system. Seventh, inefficient or irregular local capillary and cell action for the appropriation and deposition of these materials, thus causing circumscribed or limited deformities—as spina bifida, fissure of the palate, &c.

In addition, there may be irregularity, or the forcible arrest of the normal constructive and nutritive processes from the intercurrent of some general or local complicatory affection, such as fevers, scurvy, inflammation, &c.; or undue consumption, destruction, or absorption of either or both components during or after organization, from excessive, degenerate or depraved vital action, thus modifying the osseous structure and producing or resulting in such diseases as rachitis, malacosteon, fragilitas ossium, &c.

Therefore if these propositions be considered as explanatory of the true state of things in the aberration of these processes, the indications thus afforded for treatment are obvious; viz., first, to supply the necessary material according to the deficiencies and requirements of the case; second the improvement of the general nutritive functions and vital energies thereby promoting more effectually the equable distribution and

appropriation of the requisite material; third, the induction of the local circulatory and nervous afflux and excitation of cell action for the concentration of the deficient animal and earthy matters and the completion of the ossific structure, as in spina bifida, &c. : fourth, the prevention, modification and rectification of abnormal deviations and intercurrent affections.

As the evidences of the deficiencies of the system are only palpably exhibited after birth, the treatment therefore must necessarily be instituted accordingly and subsequent to that period. In the natural state, it is well known that the lacteal secretion contains all the organic and inorganic principles essential to the growth and nutrition of the tissues and organs of the new being. In numerous instances, however, the child is not only badly organized in the first place to commence its existence, but the maternal fluid for its subsequent nourishment and increase is also imperfect, by the deprivation of several of its most important elements; hence this congenital condition, which might have been to a certain extent corrected, thus becomes more strongly confirmed, and the child is necessarily subjected to those manifold evils attendant on, and connected with, such a diathesis and inefficient sustenance.

The general appearance of the infant more readily exhibits the deficiencies of the nitrogenous or organic principles than those of the inorganic, which are very frequently insufficient, yet the absence of the latter from the system may be discovered by a close scrutiny of the osseous system, and especially of those more external points usually prominent and indicative of the state of the internal and general development, viz: the cranial fontanelles, though where suspicion has been excited, analysis of the food will be positively demonstrative. Generally, however, the deficiencies of the earthy materials are not so evident to the senses until the child has arrived at that period in which dentition ordinarily occurs, and then if the eruption of the teeth should be very tardy, or when they do appear are imperfect in their structure, such evidences, especially if conjoined with others, are almost positive in favor of the privation of the inorganic elements, not only of these organs, but of the general economy.

If these evidences, however, should not be sufficiently distinctive or be entirely absent, which they may be from the irregular distribution and appropriation of the materials, others, though more obscure, would be displayed in the progressive development of the general osseous structure, indicated generally by the degree of activity and perfection of

the instinctive prehensile and locomotive efforts peculiar to all children, though the failure of these also may be dependent on general debility, therefore are not so positive in their character as the former. Again, as age progresses through and past the period of first dentition and proceeds to that of the second, and during the whole period of this latter, which occupies a considerable part of the time and is coincident with the continuous development of the osseous tissue, additional ocular and palpable signs are thus regularly presented, directly indicative of the condition and progress of the general osseous structure; and if those more obscure ones peculiar to its deficiencies are also manifested, the evidence becomes highly conclusive. The condition of the texture of the teeth has, however, been so fully recognized and acknowledged as indicative of the state of the general health at the different periods in which they were developed and erupted, that its co-existing condition at such periods has been confidently predicated on the indications thus afforded by their appearance in after life, yet I am not aware that this has ever been specially considered as directly indicative of the co-existing state of the osseous system.

By a careful observation, therefore, of the local and general signs thus presented, highly useful information may be obtained respecting the development and nutrition of these concealed organic pillars and buttresses, upon and to which the other tissues and organs are so admirably suspended and so firmly attached, and thus the condition of this hidden structure and the progress which it is making in the different periods of life towards its final completion, may, *ceteris paribus*, be ascertained with great certainty.

For the more successful fulfilment of the indications, therefore, it is first requisite to ascertain the peculiar deficiencies, and in the one more particularly considered, in which there is a greater absence of the inorganic elements of the osseous structure, the principal constituent of which is phosphate of lime; this latter should be given accordingly, and in connection with the usual albuminous and oleaginous ingredients of the food; and if necessary, those corroborant measures ordinarily so efficient in improving the vital energies, might generally be sufficient for all practical purposes.

In those cases of imperfect or abortive local development, as fissure of the palate, spina bifida, &c., the completion or union might, it is believed, be generally effected, without the aid of the usual harsh operations, by the excitation and prolonged continuation around and therein

of moderate irritation, thereby inviting an afflux of blood and nervous energy to the part sufficient to cause plasmatic effusion and increased cell activity for the construction of the cartilaginous base, administering at the same time the phosphate of lime for the promotion of the ultimate organization; and if the general system should be in that state in which plasma could not readily and properly be supplied, preceding or in conjunction with it, those substances which produce and increase this organizable principle would be necessary. There is very little doubt that this course would frequently be favorable,* as it is directly in accordance with the principles upon which all treatment heretofore adopted has been successful, in which the general treatment has apparently been entirely neglected, thus necessarily assuming that sufficient material already existed in the system for the constructive purposes. It is only in consequence of this previous sufficiency that operations have at all succeeded, it then merely requiring the induction of the necessary local circulatory and nervous afflux and cell action for its concentration and appropriation. But as these operations are often attended with uncertainty and great difficulty, and even danger, the latter especially in spina bifida, they are objectionable. Hence it is highly desirable that some more efficient and less dangerous method should be devised for the purpose; and in imitation of the gentle and uniform process of nature, it would be advisable to excite* this local afflux and action by milder extraneous measures, such as irritant applications, or even the moderate approximation of the tissues, separately or conjoined; and at the same time, to secure the certainty of the supply of the necessary calcareous matter, as before indicated, to administer the phosphate of lime, and to promote the activity of the assimilative functions by the appropriate means—great care, however, being exercised in such cases as spina bifida, to cause very gradual local effusion of the animal and deposition of the earthy matter, as any sudden or extensive modification might prove as disastrous as that resulting from the means so ineffectually and often fatally resorted to at present. The progression of the deposition and construction would possibly cause the absorption of the fluid usually existing in the sac connected with this latter malformation; but to promote the union more effectually, it might be necessary gradually to remove it by the acupuncture.

In other cases there is a more general derangement of the constructive and nutritive osseous processes, there being not only a deficiency of the necessary materials, and the calcareous especially, but also a partial or extensive modification or removal of that which has already been

organized, giving rise to those conditions more particularly included under the head of atrophy. Of this there are two principal divisions, viz., simple and complicated. In the first, the most prominent affection, exhibiting derangement of both development and nutrition, is that known as rickets, in which there is not only insufficient and often irregular primary deposit of the calcareous matter especially, and to some extent subsequent absorption, but certain other abnormal deviations not so apparent, all of which, however, are often corrected by a spontaneous change effected in the system, particularly at certain periods, as at puberty. Yet as there is always attendant on its continuance a modification and destruction of the symmetrical proportions of the organism, interfering materially with the subsequent functions and duties of life, and occasionally even rendering existence a burthen, it becomes important to prevent such evils. In the accomplishment of this, as the deficiency of the calcareous materials is the most strikingly observable, it is obviously requisite to supply that which is absent or destroyed; hence the exhibition of phosphate of lime is strongly indicated, not only for this purpose, but for its additional properties of increasing organic development and functional energy. Still, however, the mere introduction of this substance into the economy will not fully correct the derangement, although, as shown by Dr. Beneke, it will undoubtedly prove highly useful, as generally the inefficient or deranged organic action is the direct consequence of diseased influence, demonstrated by the fact that this disorder has been cured by those remedies which do not usually contain lime, but possess the power to modify and correct abnormal action, and promote healthy nutrition, assimilation especially. As no single known remedy possesses these properties in a higher degree than cod-liver oil, it will be desirable to aid the action of the former by the conjoined influence of the latter. Therefore as the phosphate of lime separately has proved very beneficial, and the cod-liver oil of itself in some instances curative in this affection, it is reasonable and just to infer that their combined influence would be still more efficient if not certainly successful in the greater proportion of cases, especially as they both not only moderate and rectify diseased action, but supply and increase the essential materials, and at the same time greatly promote the necessary organic and cell action for their appropriation.

Other cases, again, present somewhat similar characteristics, in which there is, however, more evident diseased action and nutritive lesion, the loss of the earthy matter being both actual and relative, and the ani-

mal matter often modified, and more directly dependent on undue absorption or disproportionate consumption and waste after development, the type of these being strikingly exhibited in malacosteon. In them, the most prominent remedies are those above mentioned, and their exhibition would be especially indicated not only to prevent the undue destruction of the osseous matter, but to re-supply the materials necessary for its restoration, correct the deranged action and re-excite the healthy nutritive processes. And to promote more effectually the action of these, it may be requisite, in some instances, to aid still further by other means, such as tonics and alteratives, as iron, iodine; or both combined, as iodide of iron, &c, in conjunction with those therapeutic and hygienic measures so essential to the ultimate success of every treatment.

These remarks are also applicable to those other conditions dependent very frequently, though not exclusively, upon some general diathesis so often resulting from congenital or acquired dyscrasia, a very conspicuous one of which is fragilitas ossium. In this the proportion of earthy matter is relatively increased, while the animal tissue is degenerated and destroyed, yet there may be, from interstitial absorption, a general and actual loss of both components. In the prevention and correction of these, it becomes necessary to act upon similar general principles; but as it, in common with the others, is sometimes dependent on, or complicated with, a syphilitic or other cachexia, or a malignant tendency or degradation of system, it is, and they are, in consequence often less amenable to treatment, the ultimate success in all such affections being, of course, proportionate to their simple or complicated character. Yet, even in these latter, it is confidently believed that the course herein indicated promises to prove much more successful than any other at present practiced.—*Boston Med. and Surg. Jour.*

Philadelphia, April 6th, 1852.

THE GLANDS OF THE MOUTH, AND THEIR FUNCTIONS.

MESSRS. EDITORS:—A most interesting and important communication has recently been made to the Paris Academy of Sciences, by the distinguished physiologist, M. Claude Bernard. We hasten to lay, in a summary form, the result of his researches before our professional brethren in America, who cannot fail to be deeply interested by this new addition to positive knowledge.

The secretion of saliva in man, and the mammiferæ animals, is effect

ed by three principal glands. 1st, The parotid, situated in the hollow of the articulation of the jaw. 2d, The sub-maxillary, which is on the palate. 3rd, The sub lingual, the name which indicates its position.

From the similarity of the structure of these glands, anatomists have heretofore admitted that the products of their secretions were identical, and were destined to the same purpose.—They even extended the expression of salivary glands to the pancreas, which is situated in the abdomen, and which furnishes its products to the intestine, a short distance from the stomach. It will be remembered that M. Bernard has already, in his remarkable work, revealed the special function of the organ, which is to aid the digestion of fatty matter, by throwing upon the food an eminently emulsive liquid. In following up his researches, and in applying to the salivary glands the same species of investigation, M. Bernard has become convinced that each gland secretes a liquid different from the other, and that each liquid has its special distinct use.

In speaking of the saliva as an unique fluid, physiologists have been in error; there are, in fact, three species of saliva to be found in the mouth, more or less mixed, and in greater or less proportions, viz :—1st, The saliva of the parotid, which is abundant and liquid, like water. 2d, The saliva of the *sub-lingual* gland, which is thick and gummy; and 3d, the saliva of the sub-maxillary, which participates of the nature of the other two.

The first of these moistens and imbibes the food, and dissolves easily what is soluble; while the second, *without being able* to penetrate or dissolve the substances which it touches, lubricates or gums their surface. The third saliva appears to aid the sense of taste. In order that that these may not be thought mere imaginary distinctions, we propose to present some details indicative of the special functions of each of the three salivary glands.

Nothing is easier than to show, on a living animal, that the parotidian secretion is solely destined to moisten the dry food, and to favor its mastication. In fact, the variations in the quantity of this secretion are equally graduated, according to the dryness or moistness of the food. In the case of a horse, the parotidian canal being cut, and turned outwards, it was seen that when dry hay, straw, or bran, was given him, a copious secretion followed; and when these same substances were given in a moistened state, the secretion was exceedingly slight. The same results have often been found in experiments upon dogs and rabbits, and this gland may thus, in less than an hour, be made to secrete

from eight to ten times its weight in liquid. The conditions of secretion of the sub-lingual gland are entirely different. While mastication is going on, and the parotidian saliva is flowing freely, the sub-lingual gland remains inert; but when mastication is ended, and just before swallowing, the sub-lingual saliva flows abundantly. The distinctive character of these two salivas may be easily seen, by examining a cud of hay taken from the œsophagus of a horse; the interior will be found pasty and perfectly moistened by a watery saliva, which, being extracted, will be found to have the properties of that secreted by the parotid gland, while the exterior will be covered with a thick coat of gummy saliva, similar to that from the sub-lingual gland.

The mechanical action, or the movements of swallowing, stimulate of themselves the sub-lingual secretion, without any regard to the dryness or moistness of the aliments themselves. Thus, even while swallowing water, the sub-lingual gland continues its secretions.

As to the sub-maxillary gland, its principles of action is entirely different from the other two, it being subject to influences which depend on the sense of taste. The three salivary conduits of a dog having been isolated, a variety of substances were placed in his mouth, when immediately the sub maxillary gland secreted a large quantity of saliva; then afterwards the other glands gave their contingent. In acting differently and mechanically upon a nerve of taste, the relation between that sense and the sub-maxillary saliva was established with the greatest precision; thus, on irritating the lingual nerve with pincers, a copious secretion of this saliva, *and of this alone*, took place. This last has been regarded in Paris, as one of the most interesting of experiments, seeming to reveal one of the secret springs of our organization.

It will be readily understood that on account of their special functions, the different glands will enter successively into action, and this has been often proved by M. Bernard, by actual experiment. On giving meat to a dog, the salivary conduits of which had been laid open, the sub-maxillary saliva, destined for taste, flows first; then the parotidian saliva, to aid in mastication; then the sub-lingual, to facilitate the swallowing.

Not the least interesting fact—confirming as it does, the others—is that the chemical properties of these salivas are perfectly in harmony with their respective functions.

It would be easy to dwell upon this important subject, but the researches of M. Bernard will, before long, be presented to the public.

We were anxious, however, even in this imperfect form, to give an early notice of them to our friends.

We must not forget to mention that many instructive facts in Natural History have been developed by M. Bernard, as corollaries of his discovery of the difference of the salivary glands. In birds, the absence of the parotid and sub-maxillary glands are easily accounted for, when we remember that they have neither to taste nor masticate. The saliva which they secrete, serving only for swallowing, is similar to the sublingual saliva of mammiferous animals generally. Among these it has also been observed that the different glands vary in size, according to the nature of the food habitually consumed, and to the consequent activity required; in those which live upon dry and hard substances, the parotid gland acquires the maximum of its development; while in those which, like the seal, live in the water, and take their food in a moist state, their gland either disappears entirely, or is greatly diminished in size.

We must reserve for a future occasion the investigation of the bearing which these observations of M. Bernard may have upon the science of Dental Surgery.

THOMAS W. EVANS, D. D. S.

Dental Register.



AMERICAN ENGLISH AND FRENCH DENTISTRY AT THE WORLD'S FAIR.

EDITORS DENTAL RECORDER: Gentlemen.—At your request, I will endeavor to give you a list of the articles—especially those from America—connected with dentistry that were on exhibiton at the “World’s Fair,” with some few remarks thereon. If those few remarks should assume the dignity of a criticism, why, in all probability I may offend some; but I cannot hope to please all, therefore I will premise that I shall endeavor to speak of each article according to its merits and importance, in all fairness, without prejudice, and leave the intelligent reader to make comparisons and draw his own conclusions.

Tooth Wash and Dentifrice, from J. A. Cummings, Boston. These preparations were neatly put up, but as to their qualities I can say nothing. I noticed, however, much prettier specimens of the same articles in the French department, and which were perhaps quite as good. It was indicative of great ambition surely, to send such articles from this

continent to the World's Fair, and I desire therefore to bring the fact before the notice of the profession.

Dental Instruments. By far the best display of these articles was made by J. D. Chevalier of New York. The cameo-handled pluggers were much admired, as were also the forceps. There were several English depositors, the most prominent of which was a Mr. W. Jack.

There is considerable difference in the style of English forceps and our own, the beaks of the former being much shorter and thicker, affording great power, but at the risk of crushing the tooth. Then again, all the Instruments used in preparing and filling cavities, are much better adapted to the purpose by our American workmen than any of English manufacture that I saw on exhibition or in private hands. I conceive, therefore, that we are clearly ahead in this line.

Gold Foil. The American depositors were C. Abbey & Son, Jones, White & McCurdy, and Ashmead & Hurlburt. I noticed none of English manufacture, and but one specimen from France. Of that from America I will only say it all looked well. The quality of each, is too well known here, to need commendation from me. The French article was *crimped*, and done so evenly that I supposed machinery was employed for the purpose. What advantage it could be is more than I am able to say. In this department I can say without fear of contradiction, that we excel the world, and many English dentist's tacitly admit the fact by using the American article almost exclusively.

Plugged Teeth. Strange as it may appear, there was a small case of natural teeth *plugged* in the American department, and the only case of the kind in the exhibition. It was marked "from Philadelphia" but no number upon it, therefore it could not be ascertained who it was from; but to judge from the quality of the work, I would say, that the person who could fill teeth like them, need not hesitate about giving his name. They were without question beautifully done, and challenged the admiration of every one who saw them. I would not be afraid to wager something handsome that the English never saw such work before, nor ever dreamed that such shells of teeth could be plugged.

Artificial Teeth. I must divide this branch into three classifications for the sake of clearness. *1st. Porcelain Teeth.* American depositors were Jones, White & McCurdy, J. Alcock & S. W. Stockton. The most prominent of the two English exhibitors were Ash & Son.

Of the English teeth I need say nothing, as the style of their manufactures are doubtless well known to most of your readers, but of the

American article, I wish to say a few words, especially in regard to their superiority over the English and French.

It is demonstrable, First, that the American teeth are more natural in shading or coloring, and in their translucency. Second, that they are more permanent, when mounted as they are designed to be, and Third, that they are more comfortable to the wearer, than the English or French teeth. Every American dentist who has seen the English or French teeth can freely endorse the above.

Jones, White & McCurdy. The specimens of teeth from these gentlemen, displayed much taste in their arrangement, and were without question, very natural in appearance.

These gentlemen, whose manufactures I have been familiar with for years, evince untiring energy, and they are entitled to much credit for the improvements they have already made, and to their attention to the wants of the profession.

J. Alcock. The specimens from Mr. Alcock looked well, and ably sustained his reputation.

S. W. Stockton. These specimens were poorly arranged, without taste or judgment; beside, their excessive roughness, (so much so indeed that I could readily suppose dirt would find permanent lodgment in the pits or crevices of the enamel) detracted much from their appearance. They were not what I expected to see from him, nor at all equal to specimens of his, manufactured ten or more years ago.

Block Teeth. There were several specimens of these all from America of course, as but very few of the sort are made in England. S. Wardle, Ambler & Avery, E. Barlow, and D. K. Hitchcock were the exhibitors. Those from S. Wardle were mounted on plates and displayed some taste and judgment in carving, but looked a little rough both in material and finish, but were very substantial. Those from Ambler & Avery were mounted, and were creditable to the workman, the blocks being well carved, but to my notion, rather heavy. Those from E. Barlow were good,—were soldered to the plates—their finish was very fine and brilliant. Those from D. K. Hitchcock were mere show pieces being much reduced in size, each jaw in one piece, and not remarkable for either beauty or workmanship.

Teeth Mounted. In this line America, England, and France, were well represented. From America Drs. R. T. Reynolds, T. L. Buckingham, and O. Avery, of Pennsylvania, Drs. E. Barlow and Ambler & Avery, of New York, and W. M. Hunter, of Cincinnati, Ohio. Those from Dr. Reynolds were gum and plain teeth mounted on gold, and

were very beautiful, combining strength, beauty of adjustment and fine workmanship. These qualities with the neat arrangement of the pieces made his case attractive and called forth many well deserved encomiums. From Dr. Buckingham there were several specimens of both plain and gum teeth mounted on silver galvanized. They likewise were "hard to beat" and did the gentleman much credit. I must not forget to mention that in this case was shown the whole mechanical process of mounting teeth. The plaster and metallic casts—teeth lined—placed upon charcoal ready for soldering, etc., and from which I dare say many ideas were obtained by some of the profession abroad. Mr. O. Avery's case contained a great variety of work showing considerable ingenuity in applying spiral springs, also the central cavity plate, and all highly finished.

Mr. E. Barlow. This case contained some very pretty specimens, one plate of single teeth in particular was very elaborate, showing the accomplished and capable plate workman. An ether inhaler in this case, highly polished, induced some inquiries as to its use.

Ambler & Avery, exhibited some very creditable plate work. Indeed there was nothing in this branch from America but what was commendable.

Dr. W. M. Hunter is deserving of a somewhat extended notice in justice to the claimed improvement which he exhibited and which consists, if I understood his card aright, in uniting single teeth together in one continuous block by a silicious compound which is fused at a less heat than is required to fuse teeth, and then mounting them by soldering to the plate. By this means he claims to obtain a perfect fit to the plate and a continuous gum without joint, also a much lighter case than with blocks. If he can do all this, at a less cost of labor, than in making block teeth, and accomplish it with a good degree of certainty in each particular case, he is deserving of much credit, and the profession should avail themselves of it.

I would not neglect to notice Dr. A. Hill's stopping, which was exhibited in the case of Jones, White & McCurdy. With this article, the dentists abroad are not quite so familiar as are those of our own country, but I suppose will soon be making inquiries about it, now that they have seen it. This constitutes, I believe, all worthy of mention in the dental department, from our own country. I wish now to make a few remarks on English dentistry and perhaps French, but not to describe either.

The English were fairly represented, but not so largely as might have been supposed. Such an exhibition, held under similar circumstances in our own country, would have shown ten times the amount of dentist-

ry displayed there. Still their best teeth and best work were to be seen there, and yet how far short they fall in each branch! Their artificial teeth are heavy and clumsy, by being so large and thick, and the manner of attaching them to the plate so temporary and insecure, beside their abominable bone work, fit only for a barbarous age because of its filthiness, and excusable only when dentistry was in its infancy. Why will dentists who have the honor and character of the profession at heart thus temporize? I can find abundant reasons, why those who think of the shillings only, should follow this practice, from the fact, that a new set of teeth will be required in about twelve months; but this is a short sighted policy even in a mercenary point of view. If the prices of dental operations were reduced, as they could be (without the operator's suffering in the least) by using American teeth two-thirds of the labor would be saved in getting up a set of teeth, and the patient would have a permanent operation that would not require renewal every year. Let such work be done, let the people have the assurance, that in indulging in the luxury of artificial teeth, they do not entail upon themselves a heavy annual expense, and I think the inference a fair one, that a much greater amount of dentistry would be required than is now performed. Many, very many who now never dream of having artificial teeth would then be induced to call on the dentist, and thus the loss in reducing the price would be more than met by additional patients and operations; but to come back from this digression. In filling teeth, I doubt much if there be more than a dozen dentists in London (and London is England) who can do a patient justice in the matter of plugging teeth. I do not *guess* this, but base the assertion on observation, pretty extensive and satisfactory, and the information of one who has had good opportunity to judge. I therefore feel free to declare that in plugging teeth, in mechanical work, and the manufacture of porcelain teeth and gold foil and in dental instruments, we are many years in advance of them. In a word, that the profession of dentistry and all its collateral branches in America, are years in advance of the world. You may think this a sweeping assertion, but I can assure you the facts bear me out in making it.

Again, while they have not one periodical devoted exclusively to the interests of the profession abroad, we have *five*, all flourishing, and disseminating much useful information; beside while dentistry is not taught as a profession in Europe, we have, as I learn from the "Dental News Letter," *three* dental colleges in operation and a charter for a fourth; now

all this shows clearly and conclusively, that dentistry in this country is an acknowledged distinct profession and is so taught, while in Europe it has only, I may say, the reputation of a trade ; but it should not be so. It is high time something was done there to protect the honorable and capable practitioners (for such there are) from the swarm of mere charlatans, and the line of demarcation were more plainly drawn. Teach the people what they are to look for in a dentist—his functions, and what his abilities should be, and give facilities for the attainment of such qualifications by establishing colleges, or other suitable means of instruction which will have the confidence of, and be a protection to the public, and the profession will be elevated and its members respected and valued as they should be. It is a marvel to me why this has not been done long since. An effort of this sort was made I know some years ago by Dr. James Robinson of London, who spent both time and money endeavoring to sustain a dental periodical ; he also made a strong effort to have a dental chair added to the Middlesex hospital. The first fell through, but the latter has been accomplished, I believe ; but this to my mind, although a step in advance, does not go far enough. A college where dentistry alone is taught, should be established, and I am not without hope that such an institution will be started and sustained too, in proportion to its usefulness, and the qualifications and energies of such men as Drs. Robinson and Tomes favors the hope. French dentistry is not even worth mentioning, mere paste board—a miserable excuse—a libel on the name. All finish—no substance. Abounding in bone work, with some porcelain teeth which might easily be mistaken for split beans, both in shade and shape. If there could be any thing more ephemeral in substance than the French work, it was a case from Switzerland, which was a poor imitation of the French.

This I believe comprises all of interest, and is perhaps all I need say.

I will not venture an opinion as to who were entitled to medals in each branch in the American department, but leave the reader of this hastily written paper, to draw his own inferences.

Yours truly, O. D.

EXTRACT FROM A SUBSCRIBER'S LETTER.

DR. C. C. ALLEN :—Dear Sir. * * * * I notice another article "Death from Chloroform." In giving my views I shall give an extract from the London Lancet.

“ There are two modes of administering chloroform—the dangerous, and the safe. One consists in using a small quantity of it, to be inhaled in a very short time, with hardly any admixture of atmospheric air—Patients are in this manner, quickly rendered insensible. *This method is dangerous*; and though but comparatively few accidents have occurred, the latter have struck such terror into practitioners and members of the community, that this mode should never be followed.

Chloroform should first be inhaled with a *large quantity of atmospheric air*; respiration is allowed to go on regularly and normally, the chloroform is then gradually inhaled in a more concentrated form, and let off as soon as any unpleasant symptoms occur. Eight or ten minutes, and from three to five drachms of chloroform are thus employed in obtaining anæsthesia; but the loss of this time and chloroform, is made up by the absence of danger. Operations of the most delicate kind can thus be carried on for an hour; as much as three ounces or more of chloroform are consumed, and no accident occurs.”

It is upon this method I use and have used it, and have never had or seen a case where it produced any injurious effects.

This manner to me is at least reasonable. The only case when I was in the least alarmed, was one where the patient had but recently recovered from a paralysis, and I was not told of it until she was under the influence of the chloroform, and after I had performed the operation (taking out seven teeth) she could not get the use of her tongue, and one side for a few minutes.

I was called the other day to see a man bleeding from *the gums*, he is a man who drinks a good deal of port wine, and had a little touch of “*delirium*.” The gums of the lower front teeth from the first bicuspid of each side were not apparently much inflamed but the blood came from between the teeth, and so much of it he could not sit up from weakness. I thought it rather singular but his surgeon told me it frequently occurred in the British army. (The gentleman was formerly in the service.)

Yours most truly,

S. S. B.

AMALGAM IN EUROPE.

The following extract is taken from the letter of an American gentleman, now Dentist to one of the royal families on the Continent, who has not yet learned to conquer his prejudices, though every day, by his

own confession, he is witnessing proofs of their folly and unreasonableness. We were recently told of a lady who called upon a dentist in this city, who sometimes uses the *opprobrious* article, for the purpose of having her teeth filled, but who had great fear lest amalgam should be employed. On examining her mouth the dentist found one tooth which had been well preserved for many years by a large amalgam filling, in a situation where it is doubtful whether a gold filling would have done as well. To our mind the following testimony is much stronger in favor of amalgam than against it; we always preferred facts to the highest authority when arrayed against them.—*Ed. Rec.*

“I am not an advocate for the use of amalgams of any kind, and I do not think I have employed the article above a dozen times in all my practice, and then only under peculiar circumstances. By referring to my recorded operations, I find I last employed amalgam in the crown of a lower molar, so much loosened by alveolar absorption, as to be nearly ready to drop out. The amalgam was used by request and I did not hesitate to employ it, for certainly the tooth was not in a condition to bear pressure. In very large cavities, in the teeth of poor patients, I sometimes employ tin foil, which I consider preferable to amalgam. My objections to amalgam are those which are daily expressed in our Dental Journals at home; I need not, therefore, recapitulate them. I have never seen a case of Ptyalism which I could refer to amalgam fillings for a cause; and I have had Italian patients under my hands, whose molar teeth have been nearly all filled with amalgam, and yet no trace of mercurialization present. I think a great deal more opprobrium has been thrown upon amalgam fillings than they deserve. They are used very much in England by first-rate dentists, and I have seen cases where they have stood successfully the test of many years; indeed, I have often much difficulty to induce my English patients to suffer me to fill with gold foil instead of cement, to which they are very partial. I lately removed an amalgam filling from an upper molar, which had been inserted thirteen years before, by one of the Nasmyths. The surface of the cement was rough and much corroded, and the unprotected edge of the cavity decayed, but I found the bottom of the cavity quite sound. The Italian dentists, when they do attempt to stop the teeth, rarely use anything but cements of the worst kind, and as they never remove any decay from the cavities they pretend to stop, their fillings fall out in a few days. An Italian dentist in Florence, succeeded in making a gold stopping remain between two

teeth nearly a month; the patient spoke of it as a great exploit, and wished to know if I could do as much, so I promised to try."

MISCELLANIA.

Death from an over dose of Morphia.—Dr. Bradeley, of Chelmsford, Eng., a distinguished physician, recently came to his death under the following circumstances. On Sunday afternoon, the deceased was afflicted with a severe tooth ache, which continued without intermission all the following night. About 4 o'clock on Monday morning he went down into his study for the purpose of taking something to alleviate the pain, and, inadvertently partook of some morphia, and his untimely decease was the result.

Effects of Fear—Every dentist knows that the most violent tooth ache will entirely cease, under the operation of *fear*. And that in the majority of cases, where they are called upon to extract the teeth, the pain, however violent before, will subside entirely when the patient comes to have them removed. Instances are not wanting where a sudden shock of *fear* has produced not merely temporary, but permanent relief, in cases of severe *neuralgia*. But the following, from the pen of J. C. Atkinson, M. D., to the editor of the London Lancet, shows the effect of *fear* on rheumatism and stiffness of the joints:—

"An acquaintance, between forty and forty-five years of age, long subjected to rheumatic affections of the joints of the inferior extremities, and who had become not a little stiffened by that complaint, determined on going to see a sick relative about ten miles from London. He got into a rail-way carriage, after many irregular locomotive movements, and I seated myself at his side, as I was going on the same route. It happened unfortunately, that he got into the wrong carriage, as it afterward proved, for on the division of the train into two parts at a particular junction, the bell rang for a change, and a fresh start to two different directions. The whistle sounded; my invalid then for the first time discovered his error—he was clearly in the wrong box. The effect of fear, of being carried away from his destination, was instantaneous, or rather electrical, for simultaneous with the expression of *Good God!* he jumped out of the carriage with as much nimbleness as if he had never undergone stiffening, and proceeded on his journey, wondering at the miraculous effect of a little fright; and I am able to say that he has

continued much less inflexible than before this sudden convulsion of his system."

We remember somewhere, to have seen the following. A gentleman, who had long been subject to violent attacks of *gout* in his feet, was sitting one pleasant day with his feet nicely poulticed with cabbage leaves, resting upon a stool. As the family had retired temporarily from the apartment the old gentleman had fallen asleep in his chair. The door being open, a large hog had found his way in, and being attracted by the smell, commenced eating the cabbage poultice from his feet. The old gent. awakened by the operation, and exceedingly alarmed, lest the beast should get hold of his nether extremities, started *up* in a fright, that drove away both *hog* and *gout*.

The last descendant of Ambrose Pare.—The last descendant of the Father of French Surgery, Mdle. Julienne Pare, has just died, at Laval, in her 77th. year.

Can fire be made, by rubbing two sticks together?—A curious genius, addresses the above inquiry to the Editor of the London Lancet, and remarks. "Ever since the introduction of printing, that statement is to be found, in books of travels, and in treatises on physics until the present day, and by them has become a universal belief."

Can it be proved?—*Norwalk Ed.*



MISSISSIPPI VALLEY ASSOCIATION OF DENTAL SURGEONS.

In the March No. of the Recorder, we gave an abstract of the proceedings of this society, as reported for the American Journal by A. M. Leslie, Dentist of Cincinnati.

In the April No. of the Journal appeared a review of that report by Prof. Taylor, of the Ohio College of Dental Surgery, charging Dr. Leslie with trimming, garbling, and distorting, their proceedings "to suit his own purposes." From Dr. Taylor's review it appears that Mr Leslie's speech was by him written out for publication, much more elaborately than delivered before the society,—if so he has shown more wisdom than the members of the American Society ever have done, as this speech is the best we have ever seen reported among the proceedings of any dental society. Dr. Taylor denies the correctness of the report

in several particulars and with so much asperity as to show that no very kind feeling exists between him and Dr. Leslie. As we have not noticed these parts of the report in the Recorder, so we shall pass over the denials, and only notice such parts as refer to dental patents, and the all observing topic of Dr. John Allen's improved method of manufacturing continuous gums.

Dr. Taylor has a labored argument in this review justifying dentists and physicians who obtain patents for inventions which do not "in any way affect the general and successful treatment of disease," while medicines used for the cure of diseases should not be, and are not patented. We have not space now to combat this position, but must say that we cannot see the wisdom or justice of the distinction. Nor do we believe that this is the ground upon which the medical profession discountenance patents and secrets, we have always understood it to be the principle of mutual aid among the members of a "*liberal* profession." "Freely ye have received freely give," is the motto that expresses their fellow feeling; while the "chief end" of dentists seems to be (with some liberal exceptions) "to keep all you get and get all you can,"—by the same rule, therefore, we must characterize it a *selfish* profession. Dr. Taylor asserts, that he always believed that a mechanical improvement might with propriety be patented." The more's the pity, we think. In this review, Dr. Taylor does not discuss the relative merits of Allen and Hunter's plans for uniting single teeth into blocks, but in the April No. of the Dental Register describes, and favorably notices each in such a manner as to allay much of the personal feeling, between the two claimants for priority.

THE DENTAL EXPOSITOR.

Dr. Solyman Brown, of the City of New York, has just issued the first number of a semi-annual quarto Magazine, of twelve pages in double columns, devoted to the cause of Dental Literature and Science. The first number contains the Editor's well known didactic poem, "DENTOLOGIA," which treats of "*the diseases of the teeth, and their proper remedies*," in five cantos, as originally published by Dr. E. Parmlly for private distribution among his friends. The second number, which will be issued on the first of November, will contain the Editor's Poetical Dissertation on the Laws of Health, and the Causes of Longevity, entitled "DENTAL HYGEIA," in consequence of the close connection between all constitutional disorders and the Diseases of the Teeth.

The third number will contain the commencement of a series of articles on "MECHANICAL DENTISTRY," in its present improved condition, illustrated with engravings, being a thorough revision of the author's treatise on that subject as originally published in the American Journal of Dental Science, vols. 2nd and 3d.

Subscribers can receive the first six numbers by remitting to Dr. Brown *one dollar*, or any single number for *twenty-five cents*.

It is now some years since Dr. Brown retired from an active business in this city to a residence in the country, he has now returned to the practice of his profession here, and we welcome him back, and wish him success both in his practice and in his editorial labors. See Dr. Brown's advertisement on the last page of the cover.

DR. DRAKE'S DISCOURSES,

We have received a small volume containing two addresses delivered before the Medical Library Association of Cincinnati, by Daniel Drake, M. D. The first contains many pleasing reminiscences of the early physicians, scenery, and society of Cincinnati, and the second sketches of the origin of medical periodical literature, with remarks upon the influence which it has exerted upon the medical profession.

Periodical literature is the great fact of modern times, without which countries, states, towns and villages, would still be isolated. It has changed the aspect of society throughout the world, and is destined in time to do more for civilization than it has yet done. In no department of science and in no profession has it effected more in the same space of time than in dentistry and among dentists. Those "old fogies" who have attempted to block the wheels of dental periodicals have been crushed beneath them, or found themselves left far behind in the great march of improvement. Rising from the perusal of Dr. Drake's discourses we feel brought almost into the society of the Fathers of medicine, and see them communicating with one another through the periodicals which they had established.

THE FAMILY DENTIST.—This is a small pamphlet published for gratuitous circulation and to increase business, by O. A. Jarvis, of New York. It is well written, and contains much good advice calculated, if followed, to increase the business of all dentists, as well as the author. If its contents are somewhat trite we can only say that "truth bears repeating."

NEW YORK DENTAL RECORDER.

Devoted to the Theory and Practice of
SURGICAL, MEDICAL, AND MECHANICAL DENTISTRY.

Vol. VI.

JUNE, 1852.

No. IX.

ON THE TREATMENT OF DEEP-SEATED DENTAL CARIES.

BY WM. H. DWINELLE, M. D., D. D. S.

FROM time immemorial it has been the highest aim of art to imitate nature. She has ever been the great ensample which we may continually approach, yet never reach ; and those productions will ever be considered most perfect which most nearly resemble her own.

The sculptor who has produced the faultless form, is inferior to him who clothes his statue with a living sentiment, and makes the "marble to breathe"—yet man, the handiwork, of the Divine, is infinitely superior to them both. The painter who gives you a likeness of your friend is inferior to him who produces one, from which you feel thoughts are beating responsive to your own, and where her "rapt soul is sitting in her eyes." This is the highest attainment of art ; and yet, how immeasurably do these impressions fall short of those of human magnetism and sympathy, which gush forth from the living, breathing presence.

In our own studio-laboratories, for the field of our profession is world-wide, and should embrace all art—the student who constructs a dental fixture to the satisfaction of his inexperienced patient, is greatly inferior to the master, who, in selection and arrangement, in form, and in color, closely studies the temperament and age, complexion and *physique*, of those to whom he would give the highest advantages of our art. And yet, above all of these triumphs of skill, and they are great triumphs, nature still stands pre-eminent—above all art.

Again, the operator who restores the natural dental organs, and preserves them from destruction, has achieved vastly more than he who imitates and substitutes them ; but unless he has restored to them *all* of their functions, and preserved them in *all* of their vitality, he has fallen short of the high victory which awaited him.

The nearest assimilation to nature, is the highest point of perfection, and when we have secured the preservation of the teeth at the expense of their nerves, we cannot but concede that we are at least *one* remove, and we cannot estimate this, from that complete triumph, which would

enable us to contrast a living with a dead organization. Though we discovered much, and may still more, in regard to the character and functions of the nerves of the teeth, they may have a thousand hidden influences and uses we "wot not of." Here then is the highest assimilation to nature. Here, the loftiest triumph of art! She is restored and preserved in the exercise of *all* of her powers; whether they be of resistance to morbid influences from without, restorative upon herself, or reflective upon the whole system.

In view of the fact, of the great importance of reclaiming and securing teeth at the highest point of perfection, I propose to take into consideration an extreme class of teeth, which, until within a few years, have been suffered to perish, or have been indiscriminately removed. I refer to that class of teeth whose bone has been suffered to decompose until that portion immediately over and covering the nerve, has lost all, or nearly all of its component of lime, to remove which, would be to ensure the exposure of the nerve. I shall arrange this class of teeth under three distinct heads. Before, however, entering into a consideration of the three classes in their order, I will, by way of preparation, record a few aphorisms, or statements, in regard to the physiological construction, condition, and habits of the teeth.

Although the nerve of the tooth is manifestly the main channel of communication of nervous sensibility, and although no branches proceeding from the nerve itself are perceptible in the structure of the teeth yet there is a subtle agency, which emanating from the nerve, ramifies through the tubuli of the teeth to the surface of the bone. At some future time, I propose to exemplify, in the most ample manner, the truth of the proposition, that the teeth have as legitimate a channel of nervous communication to their extremities, as any other highly endowed part of the body. It will be abundantly sufficient for my present purpose to state that I am fortified in my theory by several in our profession of the most extensive experience. Dr. Elisha Townsend, of Philadelphia, among others, who, in the April, 1851 No. of the Journal, page 260, says, The question is often asked, why is the bone so tender and exquisitely painful as it often is, at the commencement of excavating, and yet sometimes entirely painless when the diseased portions of it are removed, why should it not be attributed to inflammation? The teeth, though not highly organized, are supplied with a nerve in each fang, an artery and a vein; these give the internal vitality to the tooth, and pass that vitality through its whole bony structure, till they meet the enamel. If, then, the branches of the nerve pass through the whole

bone of the tooth, to the investing surface called the enamel, it is easy to understand how the minute ends of these veins may be exquisitely sensitive when there is caries and inflammation.

“It is the experience of every one who has practiced dental surgery, that when he has cut into the pulp cavity, and severed the connection between the bony surface immediately over it, and the nerve and blood vessels, the pain which was felt before in all parts of the tooth, immediately ceases, no portion of the cavity then being tender to the excavator, but the membrane or nerve. Does not this seem to prove, conclusively, the nerve to send minute microscopical branches through the whole tooth, which are the medium of sensation as long as the connection between them and the bone is not ruptured.”

In many respects, the condition of the bone of the tooth, is strictly analogous to that of other parts of the system. When in a healthy condition, the bone of the teeth is not usually possessed of any great degree of sensitiveness, but when diseased or inflamed by exposure and contact with irritating substances, it becomes sensitive to the extreme. The gums, when healthy, can be cut with but comparatively little pain, but when inflamed, are exceedingly sensitive to the slightest touch. The eye can be almost rudely handled in its healthy state, without giving pain, and yet, in a few hours it may become so sensitive that a feeble ray of light will overpower it.

The condition of the teeth under some circumstances becomes highly exalted, so much so, that Niel and Magendie have ascribed to them the sense of taste.*

We can amputate diseased and intensely organized bone, and cast it aside in the same way we would an inflamed and sensitive fungus from healthy parts over which it reposed.

It seems to be a principle of physiology that the extremities of the nerves shall be endowed with the highest degree of sensitiveness. The severing of the median or sciatic nerves causes scarcely more pain than the excision of a few score of their myriad branches terminating on the surface; a severe scald, covering a considerable surface causes the most agonizing pain, and often, immediate death, whereas, the severing of every one of the principal nerves which gave vitality to the parts, would be attended with comparatively slight pain.

The most sensitive part of the healthy bone of a tooth, is at the boundary line between itself and the enamel, and most distant from the nerve

* Oliver's Physiology, p. 390, 3d ed.

—in fact, at the extreme *surface* of the bone. A patient will oftentimes experience far more pain while you are excavating parts where the bone loses itself in the enamel, than when you extirpate the nerve itself.

As the condition of the bone and nerves of the teeth are in many respects analogous to other parts of the system, so are they in most respects alike subject to medical and surgical remedial agencies. Palliatives, counter-irritants, blood-letting, blistering, anodynes, caustics, &c., &c., are all of them legitimate, and often successful remedies for restoring to healthful action diseased nerves which otherwise would have perished.

But to return to the classification of the order of teeth under consideration.

CLASS 1. Teeth, the nerves of which are only covered by softened bone, but which, otherwise, so far as can be ascertained, are healthy, or are capable of being restored to health.

CLASS 2. Teeth, whose nerves are by accident, in excavating or otherwise, exposed—even lacerated, but which are healthy, or are capable of restoration to health.

CLASS 3. Teeth, whose nerves are incapable of restoration, and whose destruction is inevitably required.

The first class of teeth I propose after necessary treatment, to fill without uncapping the nerve by removing the soft parts over it, with the reasonable expectation that I shall thereby permanently arrest the decay and secure to the tooth a full exercise of all its functions and powers.

The second class I propose to restore to health, if inflammation has not extended too far, then, after carefully capping the nerve to fill the tooth in the usual manner, with a good prospect of securing its vitality, at least in a large majority of cases.

The third class I propose to treat by destroying and removing their nerves, and plugging them in the manner practiced by Maynard, Arthur, Dunning and others.

It will be readily conceded, that I have placed the most important class of teeth at the head of my list, for if they can be so treated as to entirely arrest their decay, and at the same time leave the nerve undisturbed to exercise its offices and powers without a prospect of their interruption, the operation must rank first in importance with any known in our profession.

For nearly ten years past, I have been in the practice of treating the class of teeth under consideration, in the manner referred to, and,

too, with a degree of success which warrants me in speaking with considerable confidence on the subject.

In vol. 7, (1846,) page 74, of the American Journal of Dental Science, will be found an article "On the preparation of a cavity of a tooth preparatory to plugging," in which I advocated what was then considered a new and very unorthodox method of leaving decomposed bone immediately over the nerve, when its removal would expose it, and then proceed to fill it as usual. After giving a description of the extreme cases in which I felt justified in the operation, I proceeded as follows: "Under circumstances like the foregoing, after having thoroughly cleaned the walls, and such parts of the bottom of the cavity of the tooth, as I can safely do, without interfering with the nerve, I wash out the cavity with a solution of soda, and then proceed to fill the tooth in the usual manner, taking care, however, especially if the parts are much softened immediately over the nerve to skillfully build an arch over that point, so as to enable it to resist the severe pressure of filling, finishing," &c. * *

"In considering teeth treated in the manner described, the question very naturally presents itself, '*does the decay go on?*' I answer emphatically, *No!* the decay is entirely a chemical action, and depends upon *external* agencies alone, for its progress, such as air and water, and such other influences as will promote a constant acidulated and decomposing action. The *decay* possesses no quality in itself of advancement, and when the cavity within the tooth is so completely and skillfully closed, as to cut off all communication from *without*, it is as impossible for the decay to advance, as it would be if the nerve was capped with bone of the purest whiteness."

* * * * *

"The fact that the nerve is constantly receding with the age of the patient, to say the least, encourages our operation; and if our work is skillfully performed, and does not interfere with the internal membrane of the tooth, so as to cause inflammation, justifies us in the conclusion that it is permanent and complete."

"Although the new doctrine was kindly received by most of the profession, it met with ridicule from others, accompanied by silly untruths and ridiculous hypotheses. In opposition to years of actual experience, one who disclaimed all personal knowledge or experience in my method of practice, vaguely remarks that the safety of the tooth, would be jeopardized by the partially decomposed bone, or "cartilaginous portion *drying down* and occupying less space than when the tooth was filled!"

Subsequently, in a letter to the Baltimore editor of the Journal, vol. 7, page 375, in defending my position, I attempted to prove that the bones are capable of great changes in their relative constituents, at times comparatively soft, and at others hard even to brittleness, and yet, through all their changes, retain their identity as bone. "A tooth may lose a fraction of its lime, and yet retain all of its essential qualities as a bone, as is manifest in the bones of different individuals, some of which almost vie with flint in texture, while others may be literally whittled with a knife. The bones of an infant contain but comparatively a small quantity of lime, and yet they possess all the essential qualities of bone—distinct, living, organized bone. The bones of an aged person contain a much less quantity of gelatine, and yet they perform all of the requisite functions of bone."

Of the softened parts over the nerve, I said, "the decomposition, under the circumstances, will not go on, nor will it (the soft bone) *dry down*, and occupy less space than it did before, as cartilage would, situated in a *dry place*, and entirely remote from the influence of moisture. It would not dry down, I say, especially as the tooth is not dead, and as the whole surrounding bone is of a porous quality, and the parts are immediately over a moist living nerve."

In allusion to the truthfulness of my proposition, and also to my desire thereby to benefit the profession, I concluded with "*tempus discernet!*" and time *has* shown!

Notwithstanding my subsequent experience had not only confirmed, but very extensively enlarged my views in the direction I had taken on this subject, still, with the exception of an occasional word of encouragement from some of my professional brethren, nothing came under my observation to induce me to think the profession, generally, would even sympathize with me in the great importance I had attached to the operation, until, as if to compensate for all of the past, suddenly and most unexpectedly I found the able pen of one of the best writers, as well as one of the best operators in our profession, advocating and defending, past all controversy, views and principles which heretofore for years, I had advocated and defended alone.

In No. III, of a series of articles on the "Treatment of dental caries, complicated with disorders of the pulp and periodontal membrane, by Robert Arthur, D. D. S.," Journal of Dental Science, vol. 2, new series, page 1, the able author has in a far more graceful and concise manner than I could have done, expressed my views as well as practice, in treat-

ing that class of teeth whose nerves are only protected by a layer of decomposed, or partially decomposed, bone. His extensive experience, careful observation and correct judgment in this interesting field of inquiry, enables him to add much of great practical value to the profession. I think, however, as I can date the beginning of my experience in the peculiar mode of treatment under consideration, as far back as any one within my knowledge, and, as subsequent experience and observation would be likely to have a not unimportant bearing upon the subject, I shall be excused if I hastily describe my present method of treating the class of teeth under consideration, even though I may reiterate some things already expressed in the excellent article of Doctor A.

Indorsing anew, the principal laid down in my communication to the Journal in 1846, I repeat that the decay of teeth is a chemical action, and depends upon external agencies for its progress; that this chemical operation is but the legitimate action of acid upon the tooth, uniting with its lime, which constitutes its base, gradually decomposing it, and leaving the gelatine, or animal matter, to waste by mechanical and other influences; and that this decomposing agency is generally derived from food and condiments retained in the interstices of, or between, the teeth or attached to some external nucleus until, if it is not already an acid, it is generated by acidulous fermentation. That the decay possesses no quality in itself of advancement, &c., &c. In brief, when in course of excavating a cavity preparatory to plugging, if, in my opinion, decomposition has so far proceeded as to reach the membrane of the nerve, and yet has not materially affected its healthful condition, and which said softened or decomposed bone, if removed, would ensure the exposure of the membrane or nerve, I invariably proceed to fill the tooth, leaving a portion of softened or decomposed bone, immediately over the nerve. I am particular to thoroughly excavate the walls and such parts of the bottom of the cavity of the tooth, as I can do with safety; and if any material pain continues in the tooth when I have ceased to excavate it, I dip a pledget of cotton in a concentrated solution of spirits of camphor and apply it within the cavity, let it remain for a short time, then wash it out with a weak solution of soda, dry it with soft paper and proceed as usual. If the soft parts are much sensitive to pressure, I either over-arch them with foil, or protect them with a concave cap of gold plate, so as to leave a slight space between it and the bone, immediately over the nerve. I often let this space be filled with some non-conductor, such as asbestos, liquid cuticle or wax.

I have pursued this course for several years past, and with almost universal success ; it has been very rare, indeed, that the destruction of the pulp of the tooth has supervened, and only one instance has come to my knowledge where the loss of the tooth has resulted from the operation. My practice has embraced many hundred teeth treated in this manner, and has extended over a space of eight or ten years ; and although I would naturally be as anxious to inquire into the after history of teeth treated in this manner, as circumstances would admit of, it is not to be presumed that I could have the opportunity of seeing, at the most, more than a majority of them. Yet, from careful observation, I feel justified in saying, that I should be greatly disappointed, if in fifty cases treated in the manner described, more than one of them failed, and even in the case of failure, by careful subsequent attention and treatment, the tooth could be redeemed, though with the loss of its nerve.

Whatever of decomposing agencies that may be left in the softened parts, are either neutralized by treatment, or soon exhaust themselves.

Every avenue being cut off from all external influences, all further decomposition is arrested. Nature, aided by art, is left surrounded by the most favorable circumstances to recuperate herself. The *natural* condition and relation of all the parts, the invariable changes of time, the "common law" of physiology all favor and promote the end.

The decomposed or softened bone over the nerve, after it is properly treated is the best possible covering for it ; of itself, it is a non-conductor, and though wanting in vitality, nature does not regard it as extraneous. It adapts itself to the nerve as no artificial substance can, and finds that delicate boundary line, where the living and semi-vitalized organization, blends into and reposes unharmed upon the dead.

Repeated experiments have proven beyond doubt, that this very decomposed bone, which, by the way, is not always discolored, if protected by a proper filling, will ultimately receive by absorption, or deposit from the nerve a sufficient quantity of lime to compensate for its loss, and to render it as bony and compact as before. There are more reasons to believe that this effect may be produced artificially from without, I will refer to this on another page. Every one knows that the nerve cavities of our teeth are being constantly filled up and diminished by osseous deposit, that the nerves of the teeth are continually receding with our age, so that ultimately the nerve canal becomes entirely obliterated.—*American Journal*.

TO BE CONTINUED.

For the Dental Recorder.

THE TEETH AS ORGANS OF SENSATION.

BY B. WOOD, M. D., DENTIST, NASHVILLE, TENN.

No one who has operated much upon the teeth can have failed to remark the peculiar sensibility of these organs. Although differing greatly in this respect according to age, temperament, constitutional habit, and the condition of the system at different times, yet we find them under all circumstances to be vital organs, endowed with a greater or less degree of sensibility. We see this characteristic plainly indicated in the dentine of every living tooth, without regard to proximity to the nerve. In the operation of filling, or in excavating a carious tooth for plugging, the touch of the instrument is always *felt*. This may amount to no more than a mere sensation, or, passing through the intermediate stages of "unpleasant," "disagreeable," "irritating," and "painful," it may amount to the most acute and insupportable suffering.

The remarkable difference in the susceptibility of the teeth is truly astonishing, and is a subject worthy of the most curious investigation. We sometimes operate for persons whose teeth evince not the least sensitiveness (using the term in its common acceptation); some have assured me that far from being even unpleasant, it afforded no more annoyance than to "saw or chip a piece of wood," that I might "cut and file all day" for what they cared, &c. With the generality, however, it is more or less disagreeable, and very apt to be somewhat painful, although capable of being borne without any great effort. On the other hand I have come across a few cases with whom the bare touch of an instrument upon the exposed dentine seemed to be agony—an indescribable and insupportable irritation, differing in kind but exceeding in intensity what would result from probing the nerve itself.

The susceptibility of the exposed dentine to other impressions, as of changes of temperature, galvanism, and chemical action, is also well known to the practical dentist. Thus we very commonly find the teeth after being filled sensitive to hot or cold for a few days, as is also frequently the case with those having large gold fillings serving as conductors of caloric and thus affording to the tooth bone a perception of any considerable change of temperature. A metallic substance, even the point of a small instrument, applied to a plug often produces a perceptible galvanic effect, in some instances amounting to intense pain. Sweet or acid substances applied to a carious tooth, (long before the

nerve is exposed) it is well known will induce, frequently, a sort of temporary tooth-ache. This may be the result of the action of the acid upon the sensitive dentine; or in the case of sweet substances, having no direct chemical action upon the structure of the tooth; such as honey, or a solution of sugar, it may be simply the result of the fluids, (rendered irritant by the saccharine particles) penetrating the carious portion and coming in mechanical contact with the minute nerve filaments of the structure beneath, already excited by a low grade of inflammation; or again, these substances, owing to the extensive tenuity of their particles, may even penetrate through the pores of the healthy dentine, and so come in contact with the investing membrane of the pulp itself. The molecules of sugar in a state of solution are evidently smaller than those of water; hence it is that a quantity of water may be saturated with sugar without increasing its bulk—the minute particles of the latter merely filling up the interstices between the globules of the former. This would account for temporary paroxysms of *true tooth-ache*, resulting from the introduction of sweet substances into the hollow of a tooth. But it was not my design to speculate upon the *causes* of dental sensibility, or the *modus operandi* of different agents.

Another instance of the susceptibility of dentine is found in the uneasy and sometimes painful sensations experienced in a decaying tooth, wherein external agents, whether mechanical or from heat and cold, or irritating properties of the secretions of the mouth, are brought to act upon a portion whose sensibility is exalted by a species of inflammation, the precursor of or attendant upon caries,—or wherein the inflammatory action itself may in cases of great vitality be the excitant of irritation. A patient will complain of a tooth and insist upon its being decayed, although it may have been examined by a dentist and pronounced sound; and further examination in compliance with his importunities shall verify the truth of his apprehensions. Hence it becomes important in a practical point of view not to disregard these sensations upon the false assumption that the teeth give no admonition in regard to their condition, until the nerve is exposed.

The instances referred to, however they may be explained, will suffice to recall and impress the fact that the teeth are highly endowed with sensibility. The tooth bone, dense and hard as it is, and so *mineral-like* to appearance, as to be regarded by physiologists who have little opportunity to learn its true nature, as an almost inorganic substance, is, nevertheless, found possessed in a remarkable degree of all the essential

characters of living tissue. It has vitality—it has vascularity ; it is subject to inflammation, it has irritability, it has sensation. The enamel is the only portion of the teeth which does not possess the characteristics of vitality. This is truly devoid of sensibility, but it does not prevent impressions of external objects from reaching the more highly endowed structure beneath. Indeed, it were a rational subject of inquiry whether it is not fitted for the better conveyance of certain impressions to the sensitive part than would otherwise be the case. Although perfectly covered with this crystalline substance, the teeth are still susceptible to external impressions. They are sensible to heat and cold ; they are capable of recognizing the physical properties of bodies, whether hard or soft, tenacious or friable, smooth or rough, and are also able to appreciate the chemical properties of substances, as instanced by the sensible effect of acids upon them. They are indeed still sentient organs, and, as will hereafter appear, of no mean importance as organs of special sensation.

It is to be observed that the most sensitive part of the dentine is that lying immediately under the enamel. Here interposed between the two is a membrane, apparently an attenuated and condensed continuation of the peridental membrane. It is this that is most highly and peculiarly endowed with sensibility, no doubt from being penetrated by minute nervous filaments, which, although too minute for microscopic detection, most certainly exist, for without nerves there is no sensation. This portion of the tooth, which I will call the sub-enamel membrane, is almost invariably found more or less irritable to the point of an instrument, and is sometimes extremely sensitive, notwithstanding, at the same time, the deeper portions, even though quite near the dental pulp, may not be so to any appreciable degree. This may be illustrated by reference to the finger, where the nail may be taken to represent the enamel of the tooth, and the fleshy portion the dentine ; the nail then is devoid of sensibility, the finger itself upon being punctured is painful, but it is much more so immediately under the nail. Or the enamel may be compared to the cuticle, the membrane between it and the dentine to the true skin, and the dentine to the muscular structure beneath. The sub-enamel membrane is the true seat of sensation of the teeth, as the cutis nerve is of the body.

As then the cuticle, although devoid of sensibility, does not hinder sensation in the cutis, neither does the enamel prevent impressions of sensible objects from being felt by the sentient portion beneath. In both instances sensations are conveyed ; it may be modified, perhaps

in some instances perfected, through the interposing media. This with the teeth, as well as with the general system, is ordinarily merely a sensation; easily felt and recognized; not painful, but capable of becoming so, if the exciting cause be sufficiently intense; if the protecting covering be removed as by the file or decay, or penetrated by chemical agents; if this sensibility be preternaturally exalted as by inflammation, or if the nervous system be in an irritable condition—the increased excitability extending to the teeth as well as to other parts.

We are thus prepared to understand some of the unpleasant sensations, the “pains and aches,” the excess of irritability of the teeth experienced under peculiar conditions of the system, and of the atmosphere,—sensations which cannot be ranked under the head either of sympathetic or symptomatic tooth-ache, since they are quite different from it and peculiar to themselves. We know that persons often suffer severe tooth-ache on account of general nervous derangement, or from special sympathy of the teeth with particular organs in a disordered state. This is no doubt the result of actual irritation in the dental nerve, or in the tooth pulp itself, propagated by sympathy either directly through a communicating nerve or ganglion from a neighboring part, the seat of disease, or through branches of the great sympathetic from parts remote. But of this the nervous connections referred to constitute the predisposing cause, so far as the teeth are concerned, and the disturbances of other parts the exciting cause; *both causes being within the system*. But we find other dental irritations, quite different from nervous tooth-ache, induced by causes which cannot operate upon the main dental nerves, either in the course of their track, or at their termination in the dental canals. Thus, *at times*, the teeth will be *peculiarly* sensitive to heat and cold; or they are irritable and painful if attempted to be operated upon,—the patient shrinks from the instruments’ touch, although ordinarily sufficiently tolerant of such manipulations; or teeth previously filed and plugged become now sensitive. Again, a gnawing or acute pain may be felt about the teeth, especially near the gums, and if a tooth be slightly decayed, it becomes irritable, urging the patient in alarm to the dentist. In a few days however all these unnatural sensations pass off. Now it will be observed that such conditions of the teeth occur mostly during times of some peculiar disturbance in the system; perhaps connected with or aggravated by certain states of the atmosphere, as sudden vicissitudes, damp weather, and possibly also dependent considerably upon electrical changes.

Here it is evidently the structure of the tooth, not its pulp or the nerve leading to it, that is the sufferer. The predisposing cause of the trouble is the exalted sensibility of the teeth, dependent upon the general excitability of the system; while the exciting cause is referable to *external influences*. Thus the sub-enamel membrane being preternaturally susceptible, is painfully affected by what before produced but an ordinary sensation; cold chills the teeth, causing them to "ache," heat is complained of, the contact of instruments irritates, a slight chemical or galvanic action arouses acute sensibility, atmospheric vicissitudes are resented, and even harsh and grating sounds would seem to produce unusual annoyance, giving peculiar "edge" to the sufferings of these organs during this state of extreme excitability.

This condition of things finds its analogy in the general system; for when the nerves are disordered, as in certain neuralgic and febrile affections, the increased excitability of the cutis responds painfully to external impressions: the cool breeze feels chilly; the warmth of mid-day insupportably oppressive; mechanical violence, or exercise, otherwise borne with impunity or relish, induces distress and suffering; rough handling is illy withstood; even a friendly stroke of the hand is an annoyance. And while general sensation at the surface thus complains of all around, the centre of sensation is equally disturbed; a jarring sound, a loud noise, unwelcome news, a disagreeable object, an angry word, nay sometimes the voice of consolation itself, are all so many sources of misery. Thus too in such states of nervous excitement, any feeble or diseased part or member, becomes a special sufferer,—slumbering sensibility is awakened, and symptoms heretofore well nigh subdued are again aggravated; the injured and enfeebled limb is painful to pressure, inflammation is rekindled in a healing wound, and chronic sores and ulcers become the seats of torture from trivial causes. Moreover the chief disturbance would seem in some cases to be confined almost exclusively to the seat of common sensation—the peripheral extremities of the nerves spread out upon the cutis vera. Thus, for example, in neuralgia of joints; "Motion is well borne; and so is manipulation, even rude; the uneasy sensations are not increased by either. The joint itself may be jarred, pressed, jerked with impunity; whereas much complaint may follow a pinching of the super-imposed integument; that texture sometimes seeming to be of greatly increased sensibility."*

* Miller, Principles of Surgery.

We might pursue these analogies much further, but must leave them to be carried out in the mind of the observant practitioner. They teach an important lesson, viz : that the teeth are indeed parts of the living organism, subject to the great laws which govern the whole ; and that to understand them rightly, they should be studied with an eye directed as well to general principles as to special details. Nor need they fail to suggest practical lessons, serving as a guide and monitor in the treatment of dental diseases. It is not all of dentistry to be able to perform given operations with manual expertness and mechanical finish ; but also to know when to operate, and when to defer for a more fitting occasion ; to understand the condition of the system, together with the various influences operating upon, and calculated to modify this, as well as the means by which to regulate the former and avoid or obviate the latter. Our art is not a mere handicraft, requiring only adroitness of manipulation ; nor, in addition to this, are ingenuity, invention, artistic skill and creative genius all that are necessary in order to its practice. If we would bear it forth in the world as a humane and philanthropic agent to ameliorate the sufferings and misfortunes of our fellow men, we must, while not neglectful of the former requisites, endeavor to understand the causes and influences operating in the production of those sufferings and misfortunes, so that the plastic hand, the appreciative eye, and the inventive mind, be guided by the clear diffusive light of a *sound and comprehensive* philosophy.

THE TEETH ORGANS OF SPECIAL SENSE.

We have seen that the teeth are endowed with general sensation, that they are highly susceptible to external impressions ; that this susceptibility seems to reside principally in the *sub-enamel membrane*, and that the tissue, so to speak, bears a strong analogy in its character, relations and functions to the *cutis vera*.

I now propose to show that these organs are instruments of special sensation ; and that as such they lend material aid to other senses, especially those of Touch and Taste. The senses here named are so nearly allied that I will not attempt to preserve any *precise* distinction between them in the consideration of this subject. Taste is in teeth but a modified SENSE OF TOUCH. It is more susceptible to the same stimulus, while it is also possessed of an additional endowment. The hand has to do with the physical properties of bodies ; so have the organs of Taste ; but they are enabled to arrive at greater accuracy in regard to them. They are also able to recognize chemical properties, as in

the appreciation of sapid substances. We shall see that the teeth subserve to a considerable extent the functions of both these senses.

First more especially in regard to Touch.—As this sense in the *finger* resides in the sub-cuticle tissue, so in the *teeth* it resides in the sub-enamel tissue. And as the cuticle, while shielding the sensitive part beneath from injury, &c., offers no material obstruction to tangible impressions, so the enamel while moderating the intensity of them does not prevent their perception.

That the teeth are capable of appreciating the physical properties of bodies need not be insisted upon. In biting upon substances we immediately ascertain whether they are hard or soft, rough or smooth; tenacious or brittle, &c. But the remarkable *acuteness* of these organs in this respect I think has not attracted due attention. And yet it is difficult to conceive how it should be overlooked. When desirous to learn with accuracy the nature of substances we are in the constant habit of biting upon them. In this way we discover their peculiar texture in certain particulars—as to hardness, friability, tenacity, &c.—which it were impossible to detect by means of the finger. So also we test the fineness of an “impalpable” powder; a few particles being compressed between the teeth at once reveals the presence of grit, &c., if any exists. Even when the attention is not directed to the matter, as in the ordinary mastication of food, any hard, rough, or *unnatural* particles are straightway detected. This acuteness is further instanced by the exceedingly disagreeable and even painful sensations experienced upon unexpectedly meeting with such particles. Nor in these cases is it at all necessary in order to the effect that any great force be applied, sufficient as might be supposed to disturb the teeth in their sockets or to agitate the dental pulps, for the slightest touch will suffice; in some cases the slighter the pressure the more accurate the perception. Indeed we cannot bring the teeth together, however gently, upon their own smooth and polished surface, without experiencing a marked sensation. The peculiarity of this sensation is even obscured by a more powerful compression, in which case the idea of *force* is blended with that of tactility.

The great susceptibility of the teeth to tangible qualities, is also evinced by the unpleasant sensations induced by the adhesion of tenacious substances to their surfaces. If wax, gum, balsam, candy, etc., find a lodgment upon and about the teeth, we cannot rest until the offending particles are dislodged. They may exert no mechanical pressure, as if

wedged between contiguous teeth, nor yet be so situated as to agglutinate the antagonizing ones upon closure of the jaws. That they remain adherent beyond the usual time is at once resented. Neither need the discovery of their presence be attributable to the tongue. This vigilant and "busy" member, apprized of their presence by the sensation already communicated, is rather brought into requisition as an instrument for their expulsion, or for more satisfactory exploration in regard to their precise nature and whereabouts. Let a small lump of Gum Arabic be moistened and so applied as to adhere to the surface of a tooth and it will be found at once to produce, by the bare capillary attraction, an indescribable sense of annoyance, similar to what would be experienced by the tongue or palatine surface of the mouth from the same cause. Any one may prove by this simple experiment the correctness of what has just been said.

I have been particular to draw attention to these facts, trivial as they may appear, because they so plainly show the great sensibility of the teeth, which have been regarded even by many dentists as far inferior in every vital endowment to other parts; and because they may help to throw light upon more important facts which would seem to be little understood. It may be objected, that persons become accustomed to artificial dental substitutes, and that some will suffer large accumulations of tartar, to say nothing of other execrable substances, to collect and fasten upon and about their teeth, without being conscious of their presence. Very true. And so may fixtures of various kinds be worn about the hands and other members of the body until the sensations at first experienced from the contact disappear; and individuals are sometimes met with who present quite a filthy appearance in general, but who, nevertheless, would seem to be quite unconscious of it! The hand may become conversant with harsh and rough substances, and the tongue to strong flavors and spices, until the ordinary perceptive power of these organs is blunted or altogether lost. And it is in the same way that the teeth finally come to be unaffected by impressions which in natural conditions awaken very distinct sensation: either because such impressions have become the rule instead of the exception, or because the teeth themselves from the continued action of unnatural stimulants have become blunted in sensibility. In this way vicious secretions and accumulations in the mouth may eventually pervert or destroy the power of dental sensation; and they argue nothing in the case except the necessity for their speedy correction and removal.

TO BE CONTINUED.

A HISTORICAL SKETCH OF AMERICAN DENTAL PATENTS.—WITH REMARKS.

BY GEO. W. KENDALL.

This is the title of a paper, published as article 5th in the April No. of the American Journal of Dental Science.

Who, what, or where Geo. W. Kendall is, we know not, but as he has volunteered to “haul us over the coals” pretty smartly, in the matter of “Hill’s Stopping,” and flourishes about our luckless head his controversial sword, threatening our utter annihilation, we wish to have our kick before we die, and therefore desire to pay him our humble, individual respects.

We are not aware that either personal abuse, or palpable misrepresentation is essential to a correct history of “American Dental Patents.” Neither do we regard the question of the propriety or impropriety of taking out letters patent for a certain class of inventions pertaining to the Dental profession, as permanently and definitely settled.

We know very well, that upon this subject, there is a diversity of opinion among some of the best and ablest men in our professional ranks. And we can but think that he has an unwonted degree of presumptive assurance who shall labor to charge home “quackery” and “absorbing love of gain,” upon any individual who may hold to the propriety of becoming a Patentee.

We think we can see how any gentleman in the profession might discountenance the *principle* of professional patents—and give his reasons therefor, without seeking to vent his ill humor on *one* or *two* individuals selected from the whole catalogue of names furnished him by the records of the Patent Office.

No instance in his catalogue of patents, seems to give our friend so much uneasiness—or so much to disturb his equanimity of feeling as the one with which we happen to be identified. Here the historian and reviewer becomes sensitive to a degree that is remarkable, and betrays considerable petulance of feeling as well as imbecility of logic. From the particularity with which he has examined, not merely “*Dental Patents*,” but *Patent laws* in general, we shrewdly suspect that he is one of a class of persons of whom patentees are very apt to have some knowledge. For be it known, there are some people in this world or

ours who would not be guilty of the sin of *tearing down* a neighbors' fence, yet who, nevertheless, would not hesitate to allow their cattle to feed in a neighboring meadow, if the fence should chance to *fall down*, or the bars be removed.

And we well know that there are scores of *sharpers*, who watch the weekly bulletin from the patent office at Washington with a view to appropriate the results of great toil and labor in any valuable invention for which a patent may issue, the specifications of which should chance to be defective.

And from the apparent ease with which this gentleman detects and exposes to the public eye every *flaw* or *defect* in the claims or specifications of those patents whose history he records, we judge that this is not the *first* time that his attention has been called to the subject.

We have lived long enough to learn pretty well how to appreciate this extra hue and cry about "*professional dignity*," "*etiquette*," "*quackery*," and all that sort of thing. And we consider them nearly synonymous with "*stop thief*," "*mad dog*," and the like, under circumstances not altogether dissimilar. And if *patentees* in the dental profession *only* were vulnerable upon this subject of "*equality*," "*quackery*," *empiricism* and the like, it might then do for those paragons of excellence to cast the first stone.

Let the reader observe the following astute sentence.

"I shall endeavor to show that by his (Hill's) attempt to reconcile professional dignity with an absorbing love of gain, he has forfeited all claim upon the profession."

But does he show this? Not a bit of it. Here follows a paragraph which we commend to his reconsideration, especially its grammatical construction.

"His assertion that the principles of rewards of scientific improvement as shown in the medals of scientific societies, the diplomas of colleges, and copy-rights to authors, is neither identical, or even in the remotest degree similar to that of the patent system, is too absurd to admit of argument."

There, now! if that don't "*show*" it, what does it show? We suspect that by the time the poor fellow got to this spot his nerves, hitherto remarkably steady, became somewhat deranged, producing a perturbed state of the mind, in which the above sample of jargon originated.

We commend to his careful attention the remarks of Dr. James

Taylor, on the subject of Patents, in his review of Dr. Leslie's report, as contained in the preceding article of the American Journal. And when he shall answer those arguments in a manly way, we will endeavor to furnish him with a few more of a similar character.

When it can be made to appear, beyond a reasonable doubt, that the obtaining of a patent without regard to circumstances, is a breach of professional courtesy among dentists, then we will either surrender our legal rights to the public, or our fellowship with professional brethren. It is the *principal of professional right* for which we contend, and not the propriety of every conceivable case. For there doubtless are, and may be cases, where professional propriety and fraternity would forbid a resort to legal protection. Our own case is an exception to the general rule, inasmuch as another individual who is in no way connected with the dental profession, is an equal owner with ourselves. And we submit the question, even to Kendall himself, whether good fellowship on our part, with the dental profession would absolutely require the sacrifice of this man's rights. If not, then he has arraigned us at the bar of public opinion, and chastised us there without just reason or provocation.

There are several other points in this article upon which we had thought to comment, and several errors demanding correction, the consideration of which must be deferred.

But we must not omit to notice the commendation of the "Stopping," so reluctantly wrung from our reviewer. Perhaps this should be considered a sufficient atonement for every imaginable grievance of which we think we have any cause for complaint. In this regard we respectfully acknowledge our obligation. We close with the following extract.

"I consider it the best material in use for filling teeth too much decayed to be filled with gold, and, as a *temporary* filling for sensitive teeth. It is also absolutely necessary to those dentists who are unable to put a solid gold filling into a difficult cavity; for a filling of it, well put in, is far preferable to a bad gold plug, which is worse than none. Its use is suggested in cases where the nerve is nearly exposed, as it is more easily applied than asbestos."—*Norwalk Ed.*

PECULIAR APPEARANCE OBSERVED IN THE GUMS OF CONSUMPTIVE PATIENTS.

Theophilus Thompson, M. D., F. R. S., in presenting the results of

his observations in reference to this inquiry in cases of consumption, avows his conviction of the frequent existence in phthisical subjects of a mark of the reflected edge of the gums, deeper in color than the adjoining surface. In some patients a mere streak on a raised border, in others a margin more than a line in breadth, of a vermilion tint, inclining to lake; the mark being more distinct around the lower incisors, but usually observable in both jaws, and often around the molar, but modified in its situation by the form of the mouth.

The author has reason to suspect, that the same condition of the system which produces this state of the gums, tends also to produce clubbing of the fingers. But thinks the change in the extremity of the fingers rarely occurs till some time after the streak is manifested in the gums. He thinks that cases in which the streak is observed early, or is broad, or deep colored, tend to proceed more rapidly than those in which it is absent, or slight, whilst freedom from the streak, even in the third stage, affords encouragement in treatment.

He says that the presence of this sign in women is almost conclusive evidence of the presence of the tubercular element in the blood. He contends that this symptom is one of many proofs that consumption is *not* exclusively a local disease, but rather a constitutional condition, requiring for its elucidation and treatment, far more than an acquaintance, however exact, with the phenomena of auscultation.

Will our professional brethren notice the above indications, as far as opportunity may allow upon consumptive patients, and at some future time report.—*Norwalk Ed.*



SUPERNUMERARY TEETH.

Professor Harris, in his "principles and practice of Dental Surgery," says :

"Supernumerary cuspidati never occur, but supernumerary bi-cuspidi are sometimes met with."—See page 178, fourth edition.

From the remark of Dr. Harris quoted above, we conclude that such a thing as a supernumerary cuspidati is, to say the least, of very rare occurrence. Nevertheless we do believe that for *once* at least, such a thing has occurred.

A case of this kind, has recently come under our notice. A gentleman called upon us to have some teeth stopped; and among the number

that needed filling, was a supernumerary cuspid tooth, of the right superior maxillary. The patient was twenty-eight years old, of a firm and vigorous constitution—teeth strong, and well developed. The supernumerary was somewhat smaller than the regular cuspid, yet possessing the peculiar characteristics and the distinctive marks of a genuine cuspidati. There was nothing either in color or structure to lead us to suppose that it could be one of the *temporary* set, retained after its mates had all disappeared. These we have frequently seen, but it is by no means difficult for a practiced eye to detect them. In this instance the incisores front and lateral, were all in order, with the exception of a slight irregularity produced by the pressure of an extra tooth.

As we do not remember to have noticed the like before, we record it as an *unusual* thing.—*Norwalk Ed.*

ETHERIZATION OF ANIMALS.

A most novel operation was performed at South Boston yesterday afternoon. Francis Alger, Esq. has in his possession, at his residence in South Boston, a lion about six months old, of the species known as the American lion, and brought a short time since from South America. The lion, as it has increased in size, has grown quite ferocious, and it was deemed advisable to remove his claws, which were very sharp, to prevent him from doing injury to those who might approach his cage. To accomplish this end, Dr. Charles T. Jackson yesterday administered ether to him. At first, he was quite cross and snappish, and some difficulty was experienced in getting the sponge to his nose. At last, however, a soothing impression was made, and after a pound and a half had been administered, he became perfectly docile, and slept quietly for twenty minutes. In the meantime, his claws were removed with a pair of sharp pincers, and when his lionship awoke from his trance, he found himself deprived of his most formidable weapons of defense. The lion soon recovered his wonted agility, and this morning was as lively as ever. It is probable that it will be necessary to cut off his teeth, before he will be considered a safe pet.—*Traveller.*

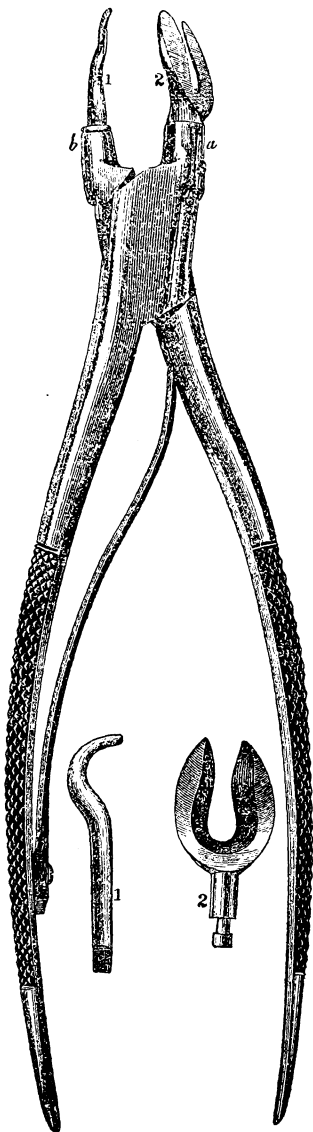
A dental operation was performed some months since in Paris, by the aid of chloroform, upon a manmouth elephant belonging to M. Hews de Massilia's menagerie. The animal had broken a tooth some years before, and had suffered several times severely from the toothache, which had excited him to madness, during which he committed great violence. After being "chloriformized" the huge animal was strongly tied with ropes, when a French doctor, after considerable difficulty, succeeded in removing two fangs, which together weighed eighteen pounds. Whether the patient chose to have the turnkey or the forceps used on this occasion, we never learned.

CONDENSING FORCEPS.

The April number of the Dental Register of the West, contains a cut illustrating a pair of condensing forceps, which the editor, Dr. Taylor, states were "ingeniously contrived and admirably adapted," by Dr. Baxter of Warsaw, Ky. Whether the editor of the Register, or Dr. Baxter, intends that the reader should understand that these instruments were invented by the latter or not we could not quite make out; but to forstall any *patent* which might be forthcoming, Mr. J. D. Chevalier has kindly furnished us the accompanying cut to show the pattern of condensing forceps, which he has manufactured for more than ten years.

The first forceps of this kind (with the swivel fulcrum) was made for our then partner in business, Dr. Geo. E. Hawes, by Mr. Chevalier, about ten years since; but whether the turning fulcrum was invented by the dentist or instrument maker, we are not informed. The condensing forceps had been used some time before this, but the swivel or turning fulcrum, gave this instrument great advantage in many cases, over those previously used, and together with the sockets for movable points, made it very useful. Soon after this instrument was made for Mr. Hawes, we made what we have considered another improvement, by constructing a pair with a spring, in such a manner that the fulcrums, as well as the points could be changed at pleasure. In our next number we will give a cut of our own improved instrument,

which we have used constantly now more than eight years.



ANNEALING GOLD FOIL.

Much of the gold foil sold in the market is imperfectly annealed, which leaves it with a stiff elastic spring that prevents it from being packed into one solid mass so as to prevent capillary attraction and thereby exclude all moisture from the plug. Unless the gold is thoroughly annealed, it will be vain to try to make a filling that will stand. The usual method of annealing is to heat each leaf separately over a slow flame from burning alcohol or charcoal. The former may be used by simply igniting it in an open dish having a burning surface as large as the sheet. When the charcoal is used, a furnace must be constructed with an open top, and the draft so regulated that a steady flame will issue from the orifice.

Each sheet is then taken between two wire racks opening like a pair of forceps, and held over the flame until it becomes of a bright red heat. The heat should be brought as high as it can be without melting the edges.

No metal is sooner hardened by bending than gold. When pure and first cast, a bar may be bent almost as easily as lead, but it requires much greater force to straighten it again, and the second bending will require more power than the straightening did.

For this reason, when foil is harder than it should be, and does not work well, it will frequently be improved by heating it red hot after it has been coiled or rolled into pellets for use. This may be done by laying them on a clean piece of charcoal and blowing a slow broad flame upon them with the blowpipe, or better still by placing them in small platina cup or crucible, and slowly heating over the alcoholic blowpipe. If properly done, it will be found that even the best gold will be somewhat improved by this second annealing.

IMPRESSION CUPS.

Various improvements, or rather alterations and additions have been made, within the past few years to the plain tins that were first used for taking impressions for artificial teeth. In our opinion the old fashioned tin plate with a border around the outside only is superior to any that has yet been made. We have tried Gilbert's, Cleveland's, and several others, and come back again to the kind which we first used.

For the lower jaw an impression cup has been sometime used having a joint in the centre, so that the circle can be expanded or contracted

to suit different sized jaws. Mr. J. D. Chevalier has recently shown us one of these cups made very neatly of German silver, and having a set screw, which is an improvement upon those we had seen, and will supercede the necessity of having a set of different sizes.

Mr. Chevalier has also constructed a new kind of *fang forceps*, having a sharp edge on the back of the jaws, designed to cut away the gum and alveolar border so that the fang may be more readily embraced. In some cases these forceps may answer a valuable purpose and assist in removing deep-seated fangs.

MECHANICAL DENTISTS.

Such has been the increase in the mechanical part of our profession, that there are now many dentists who devote their time and attention wholly to this department. Those dentists who are in need of this kind of assistance will do well to try Mr. Albert Wilcox, whose advertisement will be found on our cover. Mr. W. was engaged with Mr. Crofoot for several years, and has shown us specimens of work which are "hard to beat."

Mr. E. H. Ross has also returned to our city, and offers his services in the same line.

CONTINUOUS ARTIFICIAL GUMS.

Many enquiries are made of us respecting the recent improvements in the manufacture of artificial gums, by Messrs. Hunter and Allen, of Cincinnati. Our uniform reply has been that this improvement promises to be of general and permanent use to the profession. Farther improvements will undoubtedly be made when it is more generally practised. We have seen several pieces (entire arches) made by Dr. Hunter, that were very beautiful, and recently Dr. Guild, of Boston, showed us two made upon Allen's plan, that were very excellent, and possessed great strength. Prof. John Allen is now here, and ready to give any practical instructions, and Dr. Hunter proposes visiting New York this summer, if a class of eight or ten dentists can be procured, who would pay each a sum sufficient to defray his expenses and compensate him for the loss of his time. We advise all dentists to look into these improvements for themselves. We have several specimens of Dr. Hunter's work, which we shall be pleased to show to those who are interested.

NEW YORK DENTAL RECORDER.

Devoted to the Theory and Practice of

SURGICAL, MEDICAL, AND MECHANICAL DENTISTRY.

Vol. VI.

JULY, 1852.

No. X.

ON THE TREATMENT OF DEEP-SEATED DENTAL CARIES.

BY WM. H. DWINELLE, M. D., D. D. S.

All of these circumstances combine as aids to the success of our operation; while, in addition, "Nature is ever busy, by the silent operations of her own forces, endeavoring to cure diseases," and is continually gathering new energies to resist attacks upon her citadel.

I have intimated that diseased teeth were often as capable of restoration to health as any other part of the system. Nature often recovers of herself, after the severest inflammatory attacks upon the nervous organization, and peridental membranes of the teeth, the result of accident or disease. Depletion in various ways, with treatment of the general system, naturally suggests itself as a remedy for excessive vascular action and congestion, to which the dental organs are liable. When the physical system receives violence from whatever cause, a certain degree of inflammation is essential to her recovery; it is only the *excess* of inflammatory action which produces disorganizing results. It is the province of art to graduate this internal energy of the system, so that it may be expended at that point of physical restoration for which it was aroused.

In case a tooth whose pulp is slightly protected, has been subjected to inflammation and pain for no considerable length of time, it can often be restored to health, by first removing such parts of the decay as can be done with safety, or causing too much pain, and then treating it with a concentrated solution of camphor and tannin, together with a small quantity of soda, or tanin, soda and creosote, not very concentrated; a little experience will determine which of the two remedies operates the most kindly. In addition to this, should symptoms indicate an inflammatory condition of the system, especially a tendency to the head, gums and teeth, give cathartics, and let the patient diet; a few days will suffice, when generally it will be safe to proceed and fill the tooth as usual.

In the treatment of the class inflamed and sensitive teeth under consideration, it was my good fortune several years ago to discover and introduce into my dental practice a new and valuable remedy. I refer to the *tannate of lead*. This I have used in different ways, according to convenience or character of the case. Sometimes I take the simple powder and work it into white wax, until it has taken up all it is capable of doing, and retain its tenacity; a pill of this of sufficient size to fill the cavity will often produce the most satisfactory results. At other times I have made a solution of the tannate of lead, by mixing it with reduced chloroform, and then adding a few grains of soda. At other times when I could not readily obtain the tannate of lead of the dispensatory, I have found a good substitute in the following: Make a solution of tannin and chloroform, into this put a few grains of acetate of lead, together with a few grains of soda.

By applying a few drops of these solutions upon a pledget of cotton and placing it within the cavity of a sensitive tooth, and at the same time treating the system generally, if indications seemed to require it, I have seldom failed to meet with the most gratifying results.

The relative medicinal character of lead, its influence upon inflammatory action, has long been acknowledged, yet I think it has rarely, if ever been resorted to as a remedy for the teeth.

It is true, it has been observed for years, that teeth which were too sensitive to admit of gold filling, could be readily and painlessly filled with lead and tin. I occasionally adopt this course now, and several months afterwards remove the lead and replace it with gold. From these hints I have adopted its use in the form referred to. The character and uses of the other articles in the formula are apparent.

Some eight years ago, by way of experiment, I used arsenic to reduce the inflammation of the dental bone, and destroy its sensitiveness, but without the intention of destroying the pulp. It was my practice to let the arsenic remain not to exceed two or three hours within the tooth; after removing it, I generally found the sensibility of the tooth exceedingly exalted; filling it carefully with cotton dipped in camphor, I let it remain for several days, when I would generally find that all sensitiveness had ceased. I am sorry, however, to add, that, *ultimately*, I found that quite too many of my teeth died—though by no means a majority of them—under circumstances which gave me some unpleasant reflections in regard to the potency of arsenic. Though I abandoned the use of arsenic under circumstances like the foregoing, I had been sufficiently

successful, even with this dangerous remedy, to justify me in the conviction that there was a correct, and a practical principle involved in the idea, and that it could be successfully carried out, if I could only find some milder modification of arsenic. In conversation, a few years after, with some of my professional brethren, *cobalt* was mentioned to me as an excellent article for destroying the nerves of the teeth. After inquiring into its nature, I at once commenced using it in the manner I had before used arsenic; and after a few months experience with it, found it equal to my highest anticipations. I have used it, heretofore, combined with white wax, in the same manner that I have used the tannate of lead. I think Dr. Arthur's method of combining it with gutta percha would be far preferable. I do not allow the cobalt to remain in the tooth, generally, more than ten or fifteen hours, no matter how sensitive the bone of the tooth when the cobalt is removed, a few days time will scarcely ever fail to find the sensitiveness entirely removed. Perhaps the reason why the cobalt has been so readily effectual in my practice when combined with wax, is, that after mixing the wax thoroughly with cobalt, just before introducing it into the cavity, I dip the side of the pellet I intend shall come in contact with the bottom of the cavity again in the powdered cobalt, so that when pressed to its place, the cobalt comes in actual contact with the bone. Dr. Arthur's method of applying it with a solution of sandarach and alcohol, I should think—indeed, I *do think*, for since reading his article I have tried it repeatedly—would be a very convenient method especially for shallow cavities.

It is now about four years since I have been established in the use of cobalt in my practice, I consider it one of the most valuable of our dental remedies. It is also a safe remedy; if used with ordinary care, together with a common degree of watchfulness and attention afterwards, one scarcely need ever fail of perfect success.

As Dr. Arthur's experience is fully corroborative of my own, and as he has expressed himself at length, and most clearly, on the subject, it is not necessary for me to say more. The inflammation of the periosteum of the tooth, incident sometimes to the use of cobalt, will, of itself, almost invariably subside; if it should continue, a little remedial aid will soon restore it to its former condition.

If a tooth has been painful for any length of time, and inflammation so far extended as to commence disorganizing influences upon the structure of the nerve, of course there is no remedy but to remove the pulp and fill the dental canal to its extremity.

Since 1845 I have frequently removed gold stoppings from teeth which were filled upon softened bone, as described in this article, teeth that were filled from one to seven years before, and I have invariably found the former softened parts as hard and insensible as the surrounding bone.

It sometimes occurs that a tooth filled in the manner described, after a few days have elapsed, gives indication of premonitory symptoms of inflammation of the pulp, together with that of the peridental membrane. In these cases, I temper my remedies to the condition of the case, but always recommend treatment of the general system by cathartics, diet, and such other influences as will have a tendency to dissipate concentrated inflammatory action. In connection with this, a repeated application of a solution of sugar of lead to the gums, or simply scarifying the gums and about the necks of the teeth, is oftentimes sufficient.

In more decided cases of inflammation of the nerve, powerful counter-irritants applied to the gums on a line with the tooth, and particularly opposite its extremity, rarely fails to subdue it. For this purpose, I use cantharides plaster, nitrate of silver, and latterly, chloride of zinc. In using the cantharides plaster, I take a small piece of kid or chamouis leather, and cut out of its centre a longitudinal strip corresponding to the surface I wish to effect with collodion or liquid cuticle. I paste upon its back another piece of leather of the same size, this gives a longitudinal cavity which I fill with plaster; after drying the mucous surface as dry as possible I apply this to the gums over the tooth, letting the lip fall over the leather, as adjusted, directing the patient to be careful and not disturb its position. I let it remain until a blister has formed; almost invariable and permanent relief ensues, together with the recovery of the nerve to health.

In using the nitrate of silver, after elevating or depressing the lip, as the case may be, I apply the crude stick to the gums, letting it remain upon one part until they are thoroughly cauterized before I remove it to another. This is often an effectual remedy, and has the advantage over the other of being more convenient.

Recently, I have used chloride of zinc, making a paste with equal parts of flour and zinc, I apply in the same manner I use the cantharides. My experience has not been extensive with this article in this connection, but in some instances its influence has seemed almost magical.

In cases like the foregoing, the treatment is recommended upon the presumption that they have received proper attention, and have been

taken *in time*. Of course, when all remedies fail, the removal of the pulp is indispensable to the tooth.

I shall venture before leaving this subject, to present a few cases from my "case book," tracing each case as far as my knowledge of it extends.

"May 6, 1845. Plugged with gold, first right superior molar, for Miss M——, aged 16. Cavity large and quite sensitive; over-capped with light yellow, soft, partially decomposed bone, yielding to the touch and exceedingly sensitive to pressure. Removed all I could of it with safety, treated it with camphor built an arch over soft parts with foil, and completed the operation without pain. Directed the patient to call next day."

"July 7. Miss M—— called to-day; was unexpectedly called out of town the day after her bad tooth was filled, the reason why she did not call as directed. Says her tooth feels perfectly natural, and has given her no pain, aside from being sensitive to cold and warm drinks, but thinks this wearing away."

"Nov. 16, 1850. Miss M——, now Mrs. F——, called to-day; filled several teeth for her; says the tooth in which I sealed up decay, in 1845, is now one of the best teeth she has; feels perfectly natural. For years has not been sensitive to cold or warm drinks. It gave every indication of full vitality, good color, no appearance of decay; the large and polished surface of the gold stopping is as perfect as when it was first completed. The joints between the gold and tooth surface, as unbroken, impervious and perfect as ever."

"Sept. 19, 1846. To-day plugged a large cavity in front approximal surface of first inferior left molar, for Mrs. G——, aged 26, nerve nearly exposed, only covered by soft discolored bone, yielding and elastic to touch, soft parts very sensitive to pressure, but not sensitive when undisturbed. Dosed it with concentrated camphor for a few hours, then proceeded and filled it as usual: operation perfectly satisfactory in all respects."

"June 25, 1849. Mrs. G—— called at my office to-day, to have several teeth treated and filled. Consented to let me remove the large plugging I inserted in her lower molar tooth in 1846. She states the tooth had never given her the slightest inconvenience. On removing the gold, I found the walls and bottom of the cavity clean and dry—was gratified to find the slightly discolored bone over the nerve very hard, giving off a crepitus, and ringing as a cutting instrument passed over its

surface; it was insensible to pain even when pressed severely with a blunt instrument. The soft parts have evidently received back their quantum of lime; the thickness of the plate of bone between the cavity and the nerve has manifestly greatly increased. Re-plugged the tooth without inconvenience."

"December 20, 1849. To-day removed 21 teeth and roots for Mrs. H., aged 32. In 1844, filled second left inferior molar on grinding surface, cavity very large, excavated nearly all of the bone within the crown; parts just over the nerve, soft, yielding, discolored and very sensitive." Treated and plugged as above. "Removed this one among the rest, though it was entirely free from decay, and the plugging was as bright and firm as ever, for the reason that all the rest of the teeth are so much decayed and diseased they are past remedy. She desires a full set, and under the circumstances I feel justified in removing this with the rest. Held a *post mortem* over the victim tooth. With a watch-spring saw, I cut the tooth in twain from grinding surface, through gold stopping, nerve and roots to apex. The appearance of the exposed sectional surfaces of the different internal parts of the tooth was quite interesting. The nerve was living and healthy. The gold stopping was all that I could desire and had accomplished all that could be expected. But what was most satisfactory was the appearance of the plate of bone between the gold and nerve; here was two layers or strata of bone, that next to the gold of a yellowish cast, corresponding to parts which in 1844 were "soft, yielding, discolored and very sensitive," but now hard and strong; between this and the nerve cavity, was a layer of bone of pearly whiteness. This last, in my opinion, has been deposited or secreted during the last five years.

"February 24, 1852. Mr. C ———, aged 38, called to-day, brought a vial to me containing a tooth which he had lost by a kick from a horse. I find it to be a right superior cuspid, one which I treated in 1847, by filling over decomposed bone overlaying nerve. I recollect the tooth after being, required considerable treatment in consequence of inflammation supervening. On cracking open the tooth, found the nerve was evidently living at the time of the accident, but that the pulp cavity—the *heel* of the nerve—was nearly filled with moveable osseous granules, probably induced by inflammation after the tooth was filled. The gold stopping in the tooth was every way satisfactory."

I will give one more case, more particularly to exemplify a hint I have given in another part of this article. In 1844 and '5, I tried many

experiments with an amalgam of mercury and silver. A friend of mine called one day to have a molar tooth, much decayed, extracted. I induced him to let me try the effect of an amalgam filling in it, for the purpose of watching its influence, &c., &c. The tooth had nothing but the shell of the crown left, and was quite sensitive; but after much patience and more time, I succeeded in removing nearly all of the decay from the walls of the tooth, and a part from the bottom of the cavity. I filled it as well as I could with amalgam, with the intention of removing it in a few weeks, even though the pain ceased, for the purpose of noting the effects of the article, which of course I did not regard with much favor. Next day I saw my patient, who informed me that the tooth had given him no inconvenience. A few weeks afterwards he went to Havana, thence to Europe. I did not see him again until his return in 1848; was surprised to learn from him that he still retained the amalgam tooth, though he said it had become loose within a few months, it had probably ulcerated, though he did not know it. I removed the tooth, found the nerve dead; but on removing the amalgam, I was surprised to find the decay had not advanced since it was filled; and still more surprised to find the soft parts which I had left in the tooth, though quite dark, were completely *fossilized*, being exceedingly hard—even flinty, and when cut, leaving a bright, glittering surface. I could not satisfy myself that the pulp cavity had diminished since the operation.

Since then, I have made it a practice to particularly examine amalgam treated teeth, and have often been surprised to find parts that were evidently once soft, decay, and that about the *walls*, even of the tooth, had become the *fossilized*, as though the soft parts had absorbed a portion of the black metallic oxide thrown off from the mercury and silver, so as to arrest decay—as though in fact a kind of embalming process had transpired! Query—May not a useful hint be gathered from this? may not the dead bone, that intermediate layer in a carious tooth, which must ever over-lie and blend into the living bone, may not this be fossilized by external application of harmless substances? I am no advocate for amalgam, but am willing to receive a good hint from any source, and shall pursue this subject farther some time.

Class 2 and 3 will form the subject of an article in the next Journal.
American Journal.

For the Dental Recorder.

THE TEETH AS ORGANS OF SENSATION.

BY B. WOOD, M. D., DENTIST, NASHVILLE, TENN.

(CONCLUDED.)

That the teeth subserve the purposes and are in fact organs of special sensation would appear from a reference to the lower animals. With birds the mandibles take the place and answer the ends of teeth. The mandibles of birds are to them organs of touch. They are the *hands* of the feathered tribe. And they would seem to be the principal instruments for distinguishing the tangible character of substances, and the nature of food. A bird may at first mistake a pebble for a grain of corn, but the moment it is seized and thus *felt*, the mistake is corrected. Now in this instance the quality of the body is not judged of from its *sapid*ity, for none exists,—nor is it easy to see how any peculiar flavor of a grain of corn could be appreciated through its horn-like insipid covering. The beak of birds is also a guide in other respects, enabling them to hunt out their prey under the ground, beneath the bark of a tree, among the debris of a pool,—to ascertain the nature of and to remove obstructions, and with fowls frequenting the water no doubt helps to direct their passage beneath this element. If a bird or chicken were placed in a dark room, or blind-folded, it would be found to “*pick* its way” along by means of its bill. Thus the dental organ of birds is truly an organ of touch, and also of taste as far as the latter is allied to the former.

The same may be said of animals possessed of teeth. With them these organs supply the place of hands,—useful chiefly as a guide in the selection of food. Whether herbivora or carnivora, a horse or a dog, let an article in the shape of food be presented, and the animal must get it between his teeth and apply these tests in order to ascertain if it be “*genuine*.” It is probably by means of the sensation communicated to the teeth that a squirrel is able to tell whether there is a kernel in a nut or not, without taking pains to bore it. And it is by this means that the hunter’s dog having seized the said squirrel, finds out when he has got the *life* entirely out of *him*. Perhaps few have failed to remark the manœuvres of an animal in this interesting sort of inquiry. He will be observed, especially if the victim has shown signs of life, after a few previous manipulations of a more general character, to apply his teeth diligently to every vital part, biting down warily but efficiently so long

as any *muscular movements* are elicited in the process, and when these cease, he leaves the work without further concern.

TEETH AS ORGANS OF TASTE.

From what has been said it will readily occur that the teeth should contribute materially in the process of gustation. When they are defective, from disease or loss, the appreciation of savors is less perfect; the ability to distinguish the shades of difference in edible substances is impaired, and in consequence food is not enjoyed with the ordinary relish. This is no doubt owing in a considerable degree to imperfect mastication, as well as to the presence of vitiated secretions when the mouth is in a diseased state; but perhaps more to the absence or defective condition of a *part* of the gustatory apparatus. That the teeth constitute a legitimate part of the organs of taste, I will endeavor to make apparent by a reference to a few simple facts, obvious enough to all, but almost wholly disregarded in a physiological point of view.

The tongue is universally regarded as *the* gustatory organ; and so by way of eminence it may be regarded. The importance of other parts as auxiliaries at least is too obvious to be overlooked. Without the soft palate, the lips, the salivary glands, &c, what were the tongue as an organ of taste? But these other parts would appear to be more than appendages or mere auxiliaries, being in fact a *part* of the organ of this sense, which is made up not of an individual member but of a congeries. There is no part which can properly be styled *the* organ of taste unless it be the mouth, including the whole mucous surface of this cavity, together with its several contents from the commissure of the lips to the fauces. But the parts more directly and primarily concerned in gustation, and which may be said to constitute its active or efficient organs are the lips, the tongue, and the teeth. All these are mutually concerned in eliciting from bodies and communicating to the mind, those sensations which as a whole are strictly characterized as Taste.

Taste, in the ordinary and broad acceptation of the term, refers to the sensations derived from impressions upon the organs both of taste and of smell. We are unable to recognize those aromatic or odorous properties, ordinarily confounded with the perceptions of taste, unless the volatile particles find admittance into the nasal passages. Hence such properties are scarcely perceptible if the nose be held during the process of tasting. Rejecting then the odors of bodies as belonging strictly to olfaction, we shall find the sense of Taste, as before stated, intimately

allied to the sense of touch, if not in reality merely a refinement of it. It takes cognizance ; first, of tangible properties, depending upon the physical character of bodies ; and secondly, of sapid qualities resulting from a perception of chemical and electrical properties and conditions. The first is simple tactility, only peculiarly acute, and performed in the mouth, and the second would appear to be but a modification of the same, the sensation being kindred to what the same substances would communicate to the finger and other parts if abraded of the cuticle.

That Taste is not limited to what in common phrase is *sapid* in its nature, that is, possessed of pungency, acrimony, acidity and the like, is evident ; since it acquaints us with the peculiarities of substances having no such qualities. The physical properties of insipid bodies are discriminated by it, and these bodies are as readily distinguished from each other by the different sensations communicated as are the opposite class. Such properties afford the very first sensation of taste while those of a chemical nature are secondary in the order of their manifestation and appreciation. The former communicates the greater share of all that is experienced in ordinary eating, if we except the odorous qualities which are received through the sense of smell. Thus we know whether the diet be fluid, semi-fluid, or solid, whether unctuous mucilaginous, friable or tough, whether soft and yielding, or rough and resisting ; and from this the terms bland and pleasant, or harsh and unpalatable, &c., come to be applied to articles devoid of those active peculiarities included in ordinary phrase under the generic idea of sapidity. A sip of any beverage may appear grateful to the lips or otherwise, before the tongue has had time to verify their report by the recognition of corresponding qualities of a more recondite nature ; the first impression may be taken upon trust and the potion rejected or swallowed at once without further question.

Now, so far as Taste is dependent upon tactility—so far as *this part* of its business is concerned,—the teeth may be regarded as eminently its organs, if not so by pre-eminence. It is the analogue of these organs which with birds living on grain appear to afford the principal evidence in regard to the true nature of their food. This is done by the means of tactile sensations communicated to the mandibles and tongue. In some animals the sense of touch as connected with the tongue is not only subservient to the purposes of taste but answers a more general use. With some the tongue has an extensive motion and is strictly an organ of prehension and touch. Birds have it fibrous, or cartilaginous,

and sometimes barbed, serving the purpose of teeth. And in fishes its surface is frequently studded with teeth, which appear to be the hardening of its papilla into a structure similar to dentine; this member itself being here converted into a true dental apparatus. Thus in assuming the office of teeth it foregoes in part its ordinary functions as an organ of Taste, taking upon itself the business of this sense only so far as it is strictly identical with that of Touch. And as the tongue is thus brought into service as an instrument of mastication, so, upon the other hand do the teeth pay back this indebtedness by rendering efficient aid in the process of gustation. A fowl pecks at a grain-looking particle and rolls it between its mandibles, (or *teeth*,) until satisfied in regard to its alimentary qualities. So also the mammalia bring their teeth into requisition for the same end, as evinced by the diligence and attention with which they bite down upon any equivocal kind of food. Such is also the daily habit with the higher animal, man. Upon every unknown article of diet, or a known one in a new form, the teeth are brought to bear in the most cautious and inquisitive manner; and their indications are very apt to be relied upon. Even when a substance is to be accurately tasted, they are brought into service. The cutting edges of the incisores first test its more sensible qualities; it is then transferred to the tongue for further examination, and no sooner is it received by this umpire, than it is carried to the posterior part of the upper front teeth and gums, so that a soft mucous surface, and a resisting enamelled surface may both be made available in arriving at a correct judgment. And here and thus (in virtue partly of tangibility and partly of sapidity,) is the process of "Tasting" performed, be the substance solid or fluid.

We have remarked that the function of Taste does not stop with tangible properties: there is a further and nicer duty to perform in the appreciation of the chemical nature of bodies, including temperament and electrical and galvanic conditions. And here might spring the question as to how far electricity acts as a communicating agent between the organ of taste and sapid bodies. How similar for instance the impression from a galvanic current centered upon the tongue, (as of two metals, one above and the other below, brought to meet at its tip,) to the peculiar pungency of certain substances. The discussion of this subject, however, would lead too far astray upon the present occasion, if indeed it could hope to throw light upon it.

The teeth are not wanting in endowments sufficient to contribute

towards the perfection of taste even in this department. They are markedly intelligent as regards temperature. They are also perceptive of electrical conditions—in some instances eminently so. Every dentist knows that a galvanic action is at once recognized by them—it may be painfully, even when it would be scarcely appreciable to the tongue, especially if the susceptibility of the dentine be preternaturally exalted. It is said that two metals in different teeth being merely brought in communication through the medium of the fluids of the mouth, may induce an uneasiness and even actual tooth-ache. Certain it is that two metallic substances of different affinities will, upon being brought into contact, whether directly, or through a metallic medium, produce a sensation in the teeth. Often the point of a small instrument, touching the surface of a plug in a tooth will awaken acute pain. The peculiar effect of sweet substances, heretofore spoken of, may in part be referable to electrical action, as well as to mechanical irritation or chemical affinity, and in some instances the former would seem to afford the only rational explanation of the phenomenon.

In consequence of the affinity of the salts entering into the composition of tooth bone, for most acids, these organs become peculiarly sentient of chemical properties in one very important particular. They at once recognize the principle of acidity. Here their sentience is ever wakeful; it becomes a monitor and guide in regard both to the quality and quantity of certain articles of food likely to prove pernicious. If a strong acid but touches the teeth, ere yet the tongue is reached, due notice is given. I once had a "self-evident" proof of this from mistaking a glass of half diluted nitric acid for water. If any are skeptical let them try this "experiment."

Although an acid be not sufficiently concentrated to do direct mischief, or even to elicit any marked sensation, yet it suffices to arouse the salivary glands to action; and if the impression ceases to be felt, it is only because the sapid quality, (acidity) is thus neutralized by the alkaline reaction of the saliva.

There is a beautiful provision of nature here displayed which is worthy of notice. It is well known that acids disagreeably affect the teeth, and are necessarily injurious to them. In a concentrated form they at once do their work, leaving marked evidence of mischief. Nevertheless, in our ordinary diet we are constantly using dilute acids, and that too with impunity. It is true that certain articles such as pickles, lemons, &c., do in reality impair the structure of the teeth more or less.

Yet fruits, berries, and other substances, although containing an acid principle capable of acting upon the teeth, may be regarded as usually innocuous. Although this principle is in a less concentrated form than in the other case, yet since it is equally disposed to combine with the salts of the dentine (although of course not so energetically) why should it not in the end, by long and continued use, prove equally destructive? Nature has, in the saliva, provided against this danger a safeguard, which, under ordinary circumstances, is abundantly sufficient to ward off evil. Ere yet the acid has had time to enter into combination with the dental structure it is rendered inert by admixture with this fluid. It is to be observed that in proportion to the acidity will be the flow of saliva. If the former preponderate, the alarm is given—the teeth are *set on edge*—and we at once reject the “forbidden fruit.” In this case injury had commenced and may have left its trace; but the salivary secretion has been aroused, the teeth are bathed in the protecting fluid, and the remaining acid particles are now diverted from them to spend their action upon the salts contained in this. The setting of the teeth on edge is also induced by eating in excess that which in moderation produces no unpleasant sensation. How common is it to indulge in fruits *until* this condition is brought about. The saliva, at first sufficient in quantity and quality, to neutralize the acid, becomes by the continued demand exhausted and impoverished, so as to be inadequate to afford the necessary protection. Then it is that this peculiar sensation is experienced, warning to desist,—an admonition to be heeded as well for the good of the stomach as the teeth.

In this manner it is that the sensibility of these organs becomes a guide in regard to both the quality and quantity of food—a sentinel to forewarn of danger not only to themselves but also to the general system. That the *front* teeth are thus peculiarly endowed is a remarkable indication of wisdom and benevolence in our physical economy, notifying us to repel threatened evil at the very threshold.

RELATION OF THE DENTAL SENSE TO HEARING.

It would perhaps savor of extravagance to attempt to show that the teeth afford any material aid to the sense of hearing. And yet it were hasty to conclude that they are without influence even in this respect. The connection of their nerves with those which go to the ear might well afford ground for inference that the function of this may not be altogether independent of them. They perform a very important use

in the *modulation* and *utterance* of sound, and endowed with sensibility as they are, they might very naturally be supposed capable of its *appreciation* also, to a certain extent. They are certainly a good conductor of sound, not only transmitting it truthfully to the ear, but increasing it in force and distinctness. A watch held between the teeth is heard to tick more distinctly than it otherwise would be at the same distance. Again, every one is acquainted with the fact, that certain sounds, particularly those of a harsh and grating character, sensibly affect the teeth; in some instances amounting even to painfulness. The grating of rasps, and the jarring or creaking noise produced by the friction of rough surfaces are known, in common phrase, to "set the teeth on edge"; showing the sonorous vibrations to be, in some way, communicated to them. Through what medium is this affected? It must be either through the mind, that is by association of ideas; or through the nerves communicating between the ear and teeth; or directly through the substance of the latter themselves. Now, since it is evident that the sonorous vibrations of bodies in contact with the teeth, are not only more distinctly *heard*, but also very perceptibly *felt*, it can hardly be doubted that *intense* vibrations of the air itself would be abundantly sufficient to arouse their sensibility. And it is likely by this means, aided by a reflex action from the auditory nerve, and subsequently increased by mental association, that the sounds spoken of become so disagreeably perceptible. As to the association of ideas, it is but an apprehension, suggested from what has previously been experienced, that the same impression is again about to take place. Had the peculiar sensation resulting from such sounds never been felt by the teeth in common with the ear, it would not, when affecting the one, be associated in the mind with the other.

That the teeth are susceptible to audible impressions and are capable of transmitting them to the mind, (whether through the auditory nerves or not,) is proven by the fact, that although the ordinary channel of sound be closed, yet if a sonorous body be brought in contact with them, directly or through the intervention of a medium capable of transmitting vibrations, we shall be enabled to hear and distinguish the pitch and tone that may be produced. If, for example, one extremity of a wire be held between the teeth, and the other end, (though several yards distant,) be slightly tapped with a metallic body, the peculiar *ring* will be clearly recognized; and indeed it will be even more perceptible

than when the wire is brought in contact with the unobstructed ear itself.

If these things be so, might they not be turned to some practical advantage; and are they not worthy of attention in a benevolent and philanthropic point of view? If there be another channel besides the ear, through which the varieties of sound may be communicated to the brain, and thence to the mind, I see no cause why a defect of the ear should altogether preclude the blessings of hearing; nor why the unfortunate deaf might not still be enabled to share in the benefits of speech. Perhaps through this other channel the deaf may yet hear, the dumb speak, and even the strains of melody charm the "ears sequestred!"

In connection with this subject I would mention a fact, (perhaps often noticed by persons familiar with musical instruments,) which may suggest the practicability of constructing an artificial organ of hearing. It is curious and beautiful, fraught with meaning, affording play for fancy as well as invention, suggestive of thought both speculative and sentimental, and worthy to be adverted to for its own sake. It is simply this: that if a note, vocal or instrumental, be sounded near a musical instrument, as a piano, it will produce a vibration of the corresponding key (and no other) in the latter; from which it will be returned like an echo. There would *literally* seem to be a "sympathetic cord" touched, which at once responds in a kindred tone.

Now, connecting this circumstance with what we have just seen to be the case in regard to the facility with which sound is transmitted through the teeth to the sense of hearing, it would seem that an instrument susceptible to the various sonorous vibrations, and constructed so as to be brought in contact with these organs, even though it were through an intervening medium, might convey impressions of external sounds to the mind. I throw out the suggestion, hoping, if considered of practical value, it may lead, in the hands of the inventive, to some improvement by which many who are deprived of the appreciation of sound in its varied forms through the ordinary channel, may enjoy somewhat of this inestimable blessing.

DEATH FROM HEMORRHAGE CONSEQUENT UPON LANCING THE GUMS.

To the Editor of the Lancet:

SIR.—An infant was brought to me one morning, suffering from high

fever, and profuse diarrhæa. The consequence of a dry-hot and swollen state of the gums during dentition. I scarified the gums, and the infant was taken home. Late in the evening the father called on me, stating that early in the afternoon the mother noticed some blood, proceeding from the child's gums, and that as the day advanced, the flow of blood continued to increase. I gave him some styptic and desired him to let me know its effects. At midnight I was sent for to visit the case, and found blood freely oozing from every part of the scarified surfaces. I tried pressure, and finding it and other means ineffectual, applied the Actual Cautery, but in vain. The infant died at 7 A. M. twenty-one hours after the scarification.

I am sir, your most obedient servant,

St. Agnes, near Truro.

HENRY WHITWORTH, M. D.

London Lancet.

For the Recorder.

SPRINGING OF PLATES.

Hamilton, C. W., July 12, 1852.

DR. C. C. ALLEN.—Sir: Having seen much that has been written on the subject of "the springing of suction plates while soldering," and having had considerable difficulty in the operation myself until lately, I would like to have the "Profession generally, try the experiment which I have been trying of late with uniform success, and "report progress." Having become satisfied that it was the contraction of the plaster which caused the plates to spring, I had an iron band made of common band iron about an inch and a half high, into which, after arranging the teeth in the usual manner, I set the job, with the palatal surface upward. I then mix a small quantity of equal parts of plaster and sand, and pour it around the teeth, pouring in only enough to about half cover the teeth. I then mix a quantity of sand, nearly enough to fill the band, adding a very little plaster to keep it in its place and pour it into the band, covering plates, teeth, &c., to about three-fourths of an inch in thickness.

I then mix plaster and sand in equal parts to fill the band. The sand in which the plate is encased, expands with the plate, and prevents springing. Others may have tried the same thing without success. I would like to have you publish this in your valuable paper, if you think it worth while.

I am, &c., &c., yours,

C. S. CHITTENDEN.

THE USE OF CHLOROFORM.

In the Boston Medical and Surgical Journal, Dr. Bronson gives a history of the case of death from Chloroform, published in our April number. The description of the case does not differ materially from that furnished our readers. We have no doubt but what chloroform may, with care, be administered to almost every healthy individual without producing any serious results; and that most of the fatal cases result from too rapid inhalation of it. It is natural also to suppose that when a fatal case occurs in the practice of a regular and respectable physician or dentist, that the witnesses and jury should be anxious to put as little blame upon the doctor as possible, and to regard it as one of those unavoidable calamities which are daily occurring; but if such calamities are liable to occur, and with such frequency as we have lately seen in the practice of physicians and surgeons, can it be safe for dentists, who are supposed to understand less of the animal economy, to be dabbling with such a powerful and uncontrollable agent? In our opinion, the operations of the dentist are too transient and simple to warrant the use of this powerful anæsthetic. Dr. Bronson comes to the following conclusion as to the relative danger from the use of chloroform or ether.—*Ed. Rec.*

Autopsy held twenty-four hours after death. Rigor mortis strong. *Thorax*.—Right lung fully engorged, and containing an unusual quantity of mucus in the bronchi, but otherwise healthy throughout. Left lung rather less turgid. Pericardium containing a small quantity of serum—about two drachms. Heart, rather small and flaccid; about $\frac{3}{4}$ ss. of fluid blood in the right ventricle. Left side empty. Copious discharge of liquid blood from the pulmonary veins on their being incised. The heart perfectly normal, with the exceptions already mentioned. Aorta filled with fluid blood. *Abdomen*.—Liver, no appearance of disease. Stomach perfectly healthy, containing a small quantity of imperfect chyme, and somewhat distended with air (perhaps the result of the attempt to inflate the lungs). Intestines, nothing remarkable. The other viscera of the abdomen were not examined. *Encephalon*.—Large quantity of dark colored but quite fluid blood in the sinuses of the dura mater. External cerebral vessels not remarkably turgid. Centrum ovale, rather thickly studded with the punctæ vasculo-æ. Ventricles, nothing remarkable. No coagula were found in any part of the body."

"In the preceding case, chloroform was employed for a common purpose, and seems to have been used with at least ordinary prudence; and yet, the effect was disastrous. Cases of the kind have become somewhat common. It may be regarded as *proved* that chloroform, as an

anæsthetic agent, is not only a powerful one, but is to some extent an uncertain and unmanageable remedy. To my mind it seems clear that the article should not be used for common purposes. If employed at all, it should be reserved for grave occasions of rare occurrence. But it will be said (as it has been) that its dangerous effects arise from its improper or incautious use. I admit that the manner of using it has an important bearing on the safety of the patient, but deny that the fault is always in him who administers it. The agent itself is not entirely trustworthy. No experience and no precautions will in every instance enable one to anticipate its effects. Death sometimes comes on abruptly without being preceded by the usual change in the respiration, pulse, eye, or muscular symptoms, even when it has been administered with more than the customary care. But suppose it were a safe remedy in the hands of a few of eminent skill and rare experience, the objections to its frequent use are not removed. Extraordinary skill never can be acquired by the great body of our profession, and a medicine which supposes this cannot be generally prescribed without mischievous results.

"The destructive effects of chloroform have sometimes been attributed to its impurities, but, in my judgment, without any good reason. The effects described are those proper to this article, and not such as are produced by other agents supposed to be impurities. In the cases of chloroform-poisoning which have come to my knowledge, the drug was *too* pure. The patient got too much of the *chloroform*. Therein lay the difficulty.

"Sulphuric ether I believe to be a safer article for anæsthetic purposes than chloroform, and capable, in most cases, of accomplishing every desirable end. It acts with less promptness and less power and permanency, but these are not disadvantages. It is comparatively harmless, because its effects come on gradually, giving the practitioner time to mark the progress of the symptoms. And when the inhalation is stopped, the effects begin almost immediately to subside, differing in this respect from chloroform. I think the profession ought to return to its use, and abandon the more hazardous article.

HENRY BRONSON.

New Haven, Ct., June 29, 1852.

STILL ANOTHER DEATH FROM CHLOROFORM.

We are informed that Mrs. Nathaniel Weed, of Darien, Ct., came to her death a few days since as follows :

She had taken chloroform at the hands of Dr. Height, a physician residing in Stamford, for the removal of some teeth, and suffering no ill effects, she desired him to administer the chloroform again, for the removal of others. A few days subsequent, as we are informed, she placed herself under his care for this purpose, when he proceeded to

give her the chloroform. After she had inhaled the vapor a short time, the doctor removed it, when she desired more, saying that she was not sufficiently under its influence. He reluctantly applied it again, when, after one or two inspirations, she ceased to breathe, and immediately expired. And every effort to restore her was unavailing.

Such is substantially the story as we have received it. Mrs. Weed was about 40 years of age, and is said to have been in robust health at the time of taking the anæsthetic.—*Norwalk Ed.*

OIL OF TURPENTINE FOR SEVERE HEMORRHAGE OF THE GUMS.

The July No. of the London Lancet records a case of severe hemorrhage in the gums of a little girl, as follows:—

“Mary W——, a delicate looking child, aged nine years, seemingly unaffected with scurvy or other disease of the gums, was admitted Jan. 15th, 1852, under the care of Mr. Ure. The child was brought into the out patients’ room by her father early in the morning; he stated that when he awoke in the night, he found his daughter bleeding from the mouth, and that she has lost a great deal of blood, as her night-gown and neck were quite saturated. On examination it was found that the bleeding from the gums was general, and no defined spot whence the blood issued could be found. An astringent gargle was therefore ordered, and the child allowed to return home. In the evening the patient was again taken to the hospital, as the bleeding had continued ever since the morning, and was still going on. She was immediately admitted—sent to bed, and Tannin applied, but without any apparent relief.—Nitrate of silver was then tried, but this, as well as the application of ice also failed.

Mr. Ure now ordered five minims of the oil of turpentine to be taken in honey every hour, and a pledget dipped in the same fluid to be applied to the gums, and kept carefully *in situ*. This was done at about one o’clock in the morning, and finally arrested the hemorrhage. The night was pretty good, some castor oil was given in the morning, and it was noticed that no blood was evacuated per anum. The piece of lint moistened with oil of turpentine was still in the mouth, saturated with blood. At 4 in the afternoon this pledget was carefully removed, whereupon the gums began again to bleed; the application was renewed, and the child now took internally ten minims of oil of turpentine, in the same vehicle as before. She was allowed some beef tea, and

on the third day of her stay in the hospital, the hemorrhage stopped altogether. The child remained, however, very pale, the pulse being only 80, and very weak. She was now ordered steel preparations, and left the hospital a week after admission, in a satisfactory condition."

The Lancet relates the case of a young man terminating fatally, which occurred in Scotland. The hemorrhage was profuse, and fatal—although no teeth had been extracted, and no hurt or injury to the gums had been experienced.

MISCELLANIA.

ECONOMY IN DENTAL OPERATIONS.

We clip the following from the June No. of the London Lancet:—

"A farmer in the neighborhood of Bologne in France, applied the other day to a dentist of that city, and complained of a severe pain in a decayed tooth. The dentist told him that the tooth would bear stopping with lead, and asked him to return again in a few days. When the farmer had returned home, he thought he might save the dentist fee, and asked the blacksmith of the village to pour some melted lead into the tooth. The worthy knight of the anvil did as he was bid, and the poor farmer saved his money, but had almost the whole of one side of his jaw burnt away."

A VICTIM TO SCIENCE.

A physician in Prague, has just died a real "Martyr of Science." He had been in the habit of taking strong doses of poison, after swallowing an antidote, in order to note the effects. On the 23d ult. he took so large a quantity of morphine that all the efforts of some medical friends present at the exhibition, could not save him.

A MECHANICAL DENTIST.

"I didn't *jump* into this business," said a *swell* Dentist; "I studied the science three weeks, and besides I served my time as a practical mechanic; I worked five years for Jones, Snipes & Co., Machinists and Iron Founders; you see I'm a regular Machinist." "What branch of the trade," said the patient, "did you work at, Doctor?" "Why," said the Dentist, "I threw the iron into the furnace, and *knocked the sand off the castings.*" The patient rolled up the hide on his forehead, and sloped.

ANNUAL MEETING OF THE AMERICAN SOCIETY OF DENTAL SURGEONS.

The thirteenth anniversary of this society will be held at Newport, R. I., on Tuesday the third day of August next.

We doubt not that from the superior attractions of the place, and its occurrence at a season of the year when most of us feel the need of fresh air, and relaxation from business, will ensure a large attendance on the part of the members. Newport is certainly one of the most delightful spots in summer to be found on this continent. The delightful sea breeze. The magnificent hotels—the beautiful scenery—and genteel society—all invite a visit to this celebrated watering place.—*Norwalk Editor.*

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### CONTINUOUS ARTIFICIAL GUMS.

Almost every mail continues to bring us enquiries about the new compounds and methods of Messrs. Allen, Hunter, and Maine, for uniting single plate teeth into continuous blocks. We have already stated that the improvement promises well, but time is required to test it thoroughly. Professor John Allen is now here making very handsome work, and ready to give instruction, and Dr. Hunter will also be here about the middle of August for the same purpose. Those who are desirous of keeping up with all the improvements of the day will do well to visit New York during the next month and see and judge for themselves.

Many enquiries are also made about the patent right which Dr. Allen holds for his improvement, and we are asked if this will prevent dentists who choose, from using Hunter's plan. In reply to such questions, we can only refer our readers to the March number of the Recorder, containing Dr. Allen's specification and claim, for which he received his patent, and Dr. Hunter's remarks upon the same.

Drs. Bridges & Smith, of Brooklyn, have used Dr. Allen's plan longer than any one in this city, and we have been handed the following card from Dr. Smith for publication:—

*To the Editors of the Dental Recorder:*

Having recently been informed that a report was rife with the dental profession, that Bridges & Smith had given up the use of Dr. John Allen's patent method of mounting teeth, in their practice. (Dr. Bridges being absent), I take this method to correct any such statements, as we are still using it and shall continue so to do, so long as we entertain our present opinion of it. We have been using it one year, and would say to those who are *seemingly* so anxious to have it fail, that we will not trouble them with the burden of retailing any news *for us* upon this sub-

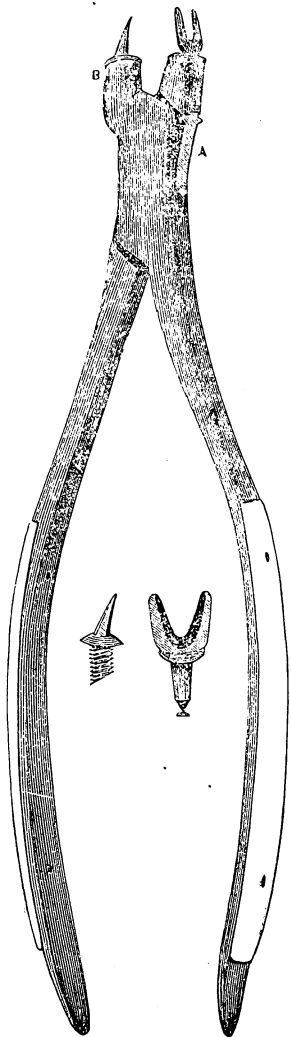


ject, for when we loose confidence in the practicability of this method, we will give public notice of the fact.

S. W. SMITH.

Brooklyn, July, 2, 1852.

### IMPROVED CONDENSING FORCEPS.



The accompanying cut, though somewhat out of drawing, illustrates very well the change we made several years since in Mr. Chevalier's condensing forceps, and which we have considered a great improvement.

By means of the spring, A, the rotary or swivel fulcrum can be changed in a moment, even while in the act of condensing the fillings. By having fulcrums of different sizes, forms and lengths, the same point may be made to condense every part of a filling. Suppose, for instance, that the filling is large, on the approximal surface of one of the bicuspides, extending from near the grinding end, or surface of the tooth quite to the gum, as is frequently the case with these teeth; if now the point and fulcrum be both the same length, while condensing that part of the filling near the point of the tooth, the fulcrum will but just catch upon the opposite side, and will be liable to fracture the end of the tooth, particularly if it be decayed on that side also. Again, while compressing the part of the filling near the gum the end of the fulcrum will strike the gum and prevent the point from going up as high between the teeth as is desirable. Now by having two fulcrums, one shorter the other longer than the condensing point, the long one will rest upon the side of the tooth, while the lower part of the filling (in the superior teeth) is condensed; then by changing the long for

the short fulcrum, the upper portion may be compressed even under

the edge of the gum. Condensing forceps we now consider indispensable in the practice of the dentist. In the first place, they compress the gold, if the tooth will bear it, more than can be done by the hand applied directly to the plugger, and with less danger, if the tooth be detached from the others, of straining it in the socket. They also save the dentist a vast amount of time and labor, and a proportionate amount of back-ache. There is, also, no danger of those accidents which sometimes result from the slipping of an ordinary plugging instrument.

These instruments are now made in sets, which make them applicable to fillings in almost any position in the mouth, and should be in the possession of every practicing dentist.

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### DR. METCALF'S ADDRESS.

The Homœopathic Medical Society of the state of New York lately held its semi-annual meeting at Syracuse, when it was addressed by J. W. Metcalf, M. D., of New York, upon "*Homœopathy and its Requirements of the Physician.*" The address of Dr. Metcalf is an ingenious and well written production, devoted to the demolition of allopathy and the establishment of homœopathy in its place. It is the misfortune of all systems sought to be established by human agencies, to possess many and great imperfections, hence nothing is easier than to attack them; to overthrow and demolish, those of long standing, is a much harder matter; but to establish new ones in their places, is the hardest task of all. In medicine, all attempts of this kind, like the labor of Sisyphus, have accomplished nothing, for before the founder could raise his system to the summit of human estimation, its own dead weight has caused it to descend to a level with all former attempts, and such we believe will be the fate of Homœopathy taken as a system. When Voltaire sought to destroy the system of revealed religion, he summoned the rival theologians to explain their creeds, and in the face of their contentions asks which the honest seeker after truth would adopt. Dr. Metcalf adopts a similar mode of reasoning, and summons the ghosts of Hippocrates, Brown, Brosais, and Clutterbuck, rival theorists, to shake our faith in the allopathic system of medicine. That there is much in the diet and regimen adopted and enforced by the new school, and that great good is accomplished by what is equivalent to a let alone system, we do not doubt; but that the infinitesimal doses of medicine administered by homœopathics has *any* effect upon health or disease we have not

been able to prove after several different attempts. If the human system were inoculated with a "high dilution" of the virus of the rattle snake, there is great doubt whether the characteristic disease would be developed. Dr. Metcalf's remarks upon the high and holy duties of the physician are just and true. They emanate from his own high regard for moral principle and love of duty, and commend themselves to all engaged in the healing art.

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### DR. DWINELLE ON DEEP-SEATED CARIES.

We publish in the present number the conclusion of a very interesting article from Dr. Dwinelle, to which we would call the attention of our readers. The writer has given the results of his practice in cases of this kind for several years. When the Recorder came into our hands we stated that the views advocated by Dr. Dwinelle coincided with our practice for years. We never remove all the decay near the nerve when it is tolerably firm and has not been disturbed ; but proceed carefully to fill over it.

We are pleased to see that Dr. Dwinelle bears testimony to the fact that some good may come out of amalgam. In a conversation with us in 1845, he expressed the same opinion, coinciding with us at that time, as to the *preservative* properties of amalgam in decayed teeth, which he considered analogous to the use of the bi-chloride for preparing the skins and feathers of birds and other animals. In our opinion this preservative, or anti-septic property is one of the most valuable ones that amalgam possesses, for it certainly does destroy the tendency of dentin to decay. In the case related by Dr. Dwinelle an imperfectly filled shell of a tooth had been preserved from farther decay for four years. We have faith to believe that we shall live to see amalgam, and those who use it, fairly treated yet.

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**GOLD FOIL.**—We have been requested to call the attention of dentists to Ruggles & Coit's gold foil. We have tried this foil and find that it works very well.—See advertisement on last page.

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**ALLEN vs. HUNTER.**—We are requested to state that Dr. Allen, who has recently returned from the South, will, in our next, reply to the article of Dr. Hunter in the March number of the Recorder.

# NEW YORK DENTAL RECORDER.

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Devoted to the Theory and Practice of  
SURGICAL, MEDICAL, AND MECHANICAL DENTISTRY.

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Vol. VI.

AUGUST, 1852.

No. XI.

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## DISSERTATION ON THE EFFECTS OF CARIOUS TEETH.

*Read before the American Society of Dental Surgeons, at their  
Annual meeting at Newport, R. I., Aug. 3, 1852.*

BY ABR. ROBERTSON, D.D.S. OF MANCHESTER, N. H.

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*Mr. President and Fellows of the American Society of Dental Surgeons :—*

In the dissertation, which by your appointment, I shall read to you to-day, about all that I have proposed to myself to attempt, has been to say enough to elicit some attention to, and, if I may, to call forth some remarks, by the gentlemen of this Society, upon a subject, which, although for some years past, I am aware has received a great deal of attention by many of our best dentists, and perhaps by all the members of this Society, still seems to me to be deserving of far more attention than even now, is usually given to it, as I believe, by dentists; and especially, by the medical profession, because I know that it is not an uncommon thing for patients who are suffering from irritable lungs, from “nervousness,” from marasmas, or from other debility, to be recommended to the country for change of air—for purer air;—when they take with them,—*are allowed to take with them*—a perfect cesspool of filth, containing matter both animal and vegetable, constantly fermenting, and decomposing, and emitting nauseous gasses, sufficient to contaminate all the air about them (unless it be to their windward in a gale) and through which all the air they breathe must pass. Because, I have frequent occasion to know that patients are often treated, by medication, for Dyspepsia, for Bronchitis and for Phthisis pulmonalis, when the commencement of the alimentary canal, and of the trachea, is in a state of constant inflammation or irritation from the effect of diseased and decomposing teeth; the whole nervous system disturbed by the same cause; and every particle of food taken into their stomachs, and every breath of air taken into their lungs, vitiated and rendered unwholesome, by noxious inhalations, or by the admixture of disordered and unhealthy

saliva; and all this train of evils allowed to remain uncorrected.—Perhaps, unheeded. Because I hear a great many complain of being troubled with, and of having been treated for, “Neuralgia,” where there is obvious nervous irritation produced and constantly kept up, by dead roots of teeth, or by badly diseased teeth; and with no attempt to remove the cause. Because I often see, and hear of, treatment by poultices, by epispastics, and otherwise, for tumefactions of the face (sometimes called—though entirely unmeaningly—“Ague of the face”) without attempting to remove, or so much as to enquire into, the cause. I say that requires far more attention than, *as I believe*, is usually given to it, and especially by the medical profession, because I am not aware that the influences of diseased teeth upon the general health is scarcely alluded to in any of the works on medical practice, or in any of the lectures in any of the medical colleges. And because I have heard many physicians, and some of them eminent in their profession, say, “I know nothing about the diseases of the teeth!” Now all this might be, in some measure, excusable, if the teeth were isolated organs—if they had no connexion with any other part of the system. But it must be remembered, that although, in their chief substance, they have but a low degree of vitality—are not highly organized—still each tooth has at least one branch, and some as many as four or more distinct branches, of nerve supplied to them; and that they are placed in that most important cavity, the mouth; forming, in part, and guarding the entrance to the alimentary canal and trachea; through which passages almost all substances of nutriment and of vivification, are received. And that they must, therefore, both by sympathy and function, produce important influences upon the whole organization. Have I not then occasion to say, that, “as I believe,” the connexion between the diseases of the general system with, and their dependence upon, the diseases of the teeth, usually receives far less attention than the importance of the subject demands? And may their diseases and influences be overlooked or neglected by dentists, or by physicians, with impunity? Let us see.

A physician is called to a patient laboring under severe fever; with hard, frequent pulse; restlessness; thirst; pain in the head, and intolerance of light. At the first glance he perceives that an eye is inflamed. And on enquiry, finds that not many days before, a particle—a very minute particle—of sand or of metal has been blown or cast into, and lodged upon that eye. The cause of all this great derangement of the whole system, this pain, this thirst, this fever, is at once explained.

But does he commence treating those symptoms of general derangement of the system with antiphlogistics or refrigerants, without first removing the cause of that derangement, to wit: that minute particle that caused that *local* inflammation? Surely not; for every physician, certainly, knows that well established, that obvious first principle of surgery and of medicine, that to treat any disease successfully he must first remove the cause.

The physician may, in like manner, be called to a patient who is in the utmost agony. His appearance frightful. Horror depicted in every feature. His eyes distended and bloodshot. His head thrown back, while his neck is drawn forward. The sterno-cleido-mastoideus muscles, by their rigidity, stand out prominent, like broad thongs of rawhide, upon his neck. The muscles of his abdomen present, to the hand, the feel of boards beneath the skin. In a few hours, perhaps, death comes to relieve the sufferer—the scene is closed. But the physician's enquiries have revealed the fact that his patient had, not long previously, stuck a little pin, or a small splinter of wood, in his hand or his finger, or a nail in his foot. The matter is all satisfactorily explained now. A minute branch of some comparatively unimportant nerve, in a remote part of the system, has been wounded! The case is Tetanus. Is it then unreasonable to suppose that a tooth, so far decayed that its pulp is exposed and inflamed, may produce disturbance beyond the local seat of disease? And more especially if that tooth is, or if many teeth are so far decayed that their whole crowns are gone; the vitality of their roots destroyed, but they still sticking in their sockets, or in the gum only, and producing inflammation and suppuration, little, if any less, than so many splinters of wood would do, may be the cause of general nervous-irritation, of fever, of—death? That such is the fact—that diseased teeth do produce, directly or indirectly, almost all manner of diseases, and their ultimate consequence—death; numerous examples might be quoted to prove; but I shall not now make quotations. What is written “in the books” all can read. I intend only to refer to a few things that I have observed in my own practice, and I will not weary you with many.

Neuralgia would seem to be a very common, almost a fashionable disease. I have seen a great many cases—probably many hundreds—where patients have told me that they were, and for a long time had been, troubled with neuralgia; and many who had been treated for it by medication; but I do not now recollect but very few cases—per-

haps not more than three or four—of facial neuralgia, where the cause could not be directly traced to diseased teeth, or dead roots of teeth; nor, where a proper treatment to restore them to health, or, if they were past such restoration, their removal would not cure their (very improperly I think) so called neuralgia.

I very well recollect the case of an old gentleman in Massachusetts, who, about two years ago, wished me to examine a lower bicuspid tooth that gave him a great deal of trouble. On examination I found that the alveolar process and gum had very much receded from the tooth; that it was, in consequence, dead and very loose, and producing a very considerable degree of inflammation. I advised its extraction; and with my fingers (for I had no instruments with me) extracted the tooth. Not long afterwards, the old gentleman sent me word that I had not only cured him of his sore and aching tooth, but also of a rheumatism in his arm, that, for a long time, he had been troubled with. We have quite a number of cases reported, in our journals and books on dentistry, of a similar kind; but as I am not aware that the pathology of rheumatism is very well understood—that the conditions on which it depends are very fully known—I do not pretend to say that I think diseased teeth are a common cause of rheumatism, or, that they ever are a direct cause of that disease. I doubt indeed if they ever are. But this, I do believe and say. If the system is predisposed to rheumatism, or almost any other disease, diseased teeth may, and probably often do, develop it. It is as well established a fact, perhaps, as almost any in the science of medicine, that individuals may be hereditarily predisposed to phthisis—be born, even, with tubercles in the lungs—but by carefully avoiding whatever might tend to develop the disease; as all depressing agents and circumstances, excessive excitements, and nervous irritations, they sometimes live to a good old age, and these tubercles remain dormant. On the other hand the most careless observer knows, that, in those thus predisposed, numerous and even slight causes—as a little exposure to sudden changes in the atmosphere; a wetting of the feet; night watching; continued anxiety or grief; and the like, develop it, in all its fearfulness, and its almost certain result. That the nervous irritation from diseased teeth may do this, Dr. Bond in his “Dental Medicine” quotes one or two very interesting cases, to show. A few weeks since, a friend of mine, now a dentist, related to me a case that came under his observation, some sixteen or eighteen years ago, that I think worth relating for its bearing on this point. It was of a young lady, then of this

state (R. I.) who, at the age of about twenty years, was supposed by her physicians, her friends, and herself, to be far gone with consumption. About this time a young gentleman, who was a medical student, and who had paid some attention to dentistry, visited her father's. On being allowed to examine her mouth, he found her teeth in a very bad condition, and recommended that several of them be extracted, and some be filled. She, at first, objected; on the ground that, at the most, she could live but a very short time, and therefore she thought it unnecessary to submit to the pain of such an operation, when it could be but so little importance to her. Her friend, however, persuaded her to allow him to remove those that were past restoration. From that day she began to amend. Her health was soon entirely restored. She was afterwards married; and about a year ago, when my friend last heard of her, she still enjoyed good health. But, as I have said of rheumatism, I do not suppose that diseased teeth, directly, produce consumption. But that the irritation, and depression, and loss of rest, and of sleep caused by them, may, and probably often does develop this disease, I have no doubt.

But, without dwelling on diseases that are, or may be, *indirectly* produced, or developed by these causes; I shall venture to say that there are doubtless many, and serious diseases, produced *directly* by decayed teeth.

I have already alluded to a large amount of disease, of a very painful character, under the denomination of neuralgia, where this agency is most palpable, direct, unmistakeable; and I scarcely need allude to the various tumors, some of them of the most malignant kinds, about the jaws, and the glands contiguous to them, caused by the irritation of decayed teeth. They are not of very unfrequent occurrence, nor of doubtful origin.

That distressing, and often fatal disease, bronchitis, there can scarcely be a doubt, is frequently produced, or at least, greatly aggravated, by inflammation extending from the gums to the fauces and throat, as well as by the debility occasioned by the disturbed sleep, the want of rest, and the impure air of which decayed teeth are the certain cause.

But there is another, most annoying and troublesome, disease, or perhaps I should rather say, class of diseases, not always very clearly defined or understood, but known by the common—the very popular—designation, dyspepsia, where the influences of decayed teeth are most direct in producing it. They are, in my belief, by far the most common cause



of-dyspepsia. Their influences here, too, act in several ways. Where an individual has many badly decayed teeth the food is usually but slightly masticated. It is therefore not sufficiently disintegrated, nor properly mixed with saliva—it is not properly prepared for the stomach. It is indeed very badly prepared for the stomach; for the little saliva that is mixed with it is impure—vitiated. All the saliva, in fact, that passes into the stomach, whether with food or otherwise, is of an impure, vitiated, irritating character. The food is, therefore, imperfectly digested. Decay of the teeth, being, as I believe,—and as I think is now generally believed by those who have given most attention to it, to be—almost, if not altogether, simply a decomposition of their substance, we have therefore, in such cases, the saliva constantly mixed with decomposed and putrid animal matter. And where the use of the brush is neglected so that the teeth become loaded with tartar, as often happens, we have vegetable matter added to this decomposing, putrid mass of filth. How irritating! How nauseating! How disgusting! The gas arising from such decomposition renders all the air taken into the lungs impure, and prevents the proper arterialization of the blood. That they constantly irritate the nervous system I need not here repeat. Thus marasmus is produced by badly digested food, by impure—improperly arterialized—blood, and by constant nervous irritation.

So fully do I believe dyspepsia to be a natural result of these causes, that I rarely, if ever, look into a patient's mouth containing many badly diseased teeth, without expecting to find that patient troubled, more or less, with dyspepsia; and my expectations are almost always verified by enquiry. I recollect a marked case of dyspepsia from decayed teeth that, in my practice, came under my observation about three years ago; a sketch of which I will give you. A lady of about thirty years old—married, and the mother of two or three children—came to consult me about her teeth. She was then, and had been for some years, suffering badly from dyspepsia. Her complexion was sallow—almost of a cadaverous hue.—She was feeble and much emaciated. On examining her mouth I found every tooth in her upper jaw—the whole sixteen—badly decayed, and the gums inflamed and turgid. I recommended the removal of all those teeth; and with her consent, proceeded to remove them all, which I accomplished at one sitting of perhaps ten minutes. Her health from that time began to improve—her strength to increase—her complexion to brighten. She is now a robust healthy woman. Similar cases are by no means unfrequent; and to attempt the cure of such a

case by change of scene, or of climate, by rest, by exercise, or by medication, without first removing that cause, would be very like filling a sieve with water—a hopeless and a tiresome task.

Before quitting, I must say a little more in relation to the miasmal phase of this subject.

Our legislators enact laws, and our municipal authorities appoint officers—"boards of health"—whose special duty it is to see that no filth, and particularly that no animal or vegetable matters, be thrown upon, or left in the streets and alleys of our towns and cities, to decompose and produce miasmata; and that vaults and cesspools be not left open to vitiate our air, and render it unhealthful. And all this very properly; and we freely pay our taxes for the making, and the executing such laws. The health of community requires it. And shall the conservators of the health of the people—the physicians—or the dentists, then overlook or disregard this far more concentrated miasma, and its source;—decayed and decaying teeth—situated as it is in the very gate-way of life of their patients?

Although I may possibly place my estimate of the evil influences of decayed teeth, upon the general health of the system, too high; still I think that this, at least, must be admitted. The cause of a very large share of all the diseases to which the human system is subject depends, in some way, either upon unwholesome food, (and I see very little difference in the result whether it is so in itself, or is rendered so in the eating of it) upon miasmata, or upon nervous irritation; and therefore many of them *may* be caused, or if not caused *may* be developed by the vitiation of the food, by the miasma, or by the nervous irritation produced by dead and diseased teeth; and that it must be, at least, *safe* practice in the treatment of almost all, if not of all diseases;—and judicious prophylactic treatment as well—to remove, or allay all sources of nervous irritation, and of depression. And I will further hazard the opinion that the teeth and their appendages are more frequently the seat of nervous irritation than any other portion, if not than of all other portions of the organization; and that if medical gentlemen, when investigating the nature, and the causes of the diseases that they are called to treat, will make it a point, carefully to examine the condition of the mouths, and particularly the teeth of their patients, they will there find a far more fruitful source of disease, and of its development than very many of them, at least, suppose.

It may be said that these remarks are calculated for physicians—for

general practitioners—rather than for dentists. Be it so. I would speak to them on this subject. And I know of no place from whence I can speak to them with more effect, or with better prospect of being heard, than in, and through this Society. But if they—our elder brothers—overlook or disregard this subject, it is the more important that we, in our humbler sphere, should pay the more attention to it; that, although we may not be called upon to treat the diseases of which they are the cause, we may do, and be fully prepared to do, all in our power to prevent their occurrence.

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## REPORT OF ANNUAL MEETING OF THE AMERICAN SOCIETY OF DENTAL SURGEONS.

The thirteenth annual meeting of the American Society of Dental Surgeons convened at the Ocean House, Newport, R. I., Tuesday, Aug. 3d, at 10 o'clock, A. M.

The meeting was called to order by the Pres't. Dr. Eleazor Parmly, of New York.

Dr. C. O. Cone, of Baltimore, Secretary of the Society, read the minutes of the last meeting, which were approved.

Dr. E. Townsend, of Philadelphia, offered the following resolution, which was adopted, viz :

*Resolved*, That all gentlemen, in the profession, who may be present, although not members of this society, are invited to attend the meetings of this Association.

A memoranda of the correspondence of the Corresponding and Recording Secretary of the Society, for the last year, was read by Dr. Cone.

Report of the Executive Council, and Examining Committee on the order of business was called for, and read.

Dr. Cone tendered his resignation as a member of a committee of the society appointed to collect facts, and report on the subject of irregularities of teeth.

Dr. J. Parmley, offered the following resolution, which was adopted.

*Resolved*, That in consequence of the non-reception of certain papers which the society understand were forwarded by Dr. Dwinelle, bearing upon his case, and which have failed to arrive in time for the action of the society, Dr. Dwinelle's case be laid over until the next annual meeting.

The report of Treasurer read, and referred to auditing committee.

Committee on amendments to the Constitution were discharged, and a new committee appointed to draught a new Constitution and By-Laws for this society.

Report of committee on Dental irregularities postponed.

Committee on Microscopic examinations, reported progress, and were continued for another year.

Committee on Foreign Dental Literature not present. Adjourned till to-morrow morning.

Aug. 4th.—Meeting called to order by the President. Several members arrived since yesterday. Minutes of yesterday read and approved.

Committee on Dental Irregularities called for. Dr. Bridges, of Brooklyn, chairman, reported, that in consequence of ill health, had not been able to attend to the duties of said committee. Dr. J. Allen, had no report in form—expected to have had an opportunity of conferring with other members, and thus concentrating a report. But as no such opportunity had been afforded him, was unable to present a report.—Whereupon, a short discussion arose, and on motion, the committee were dissolved for the purpose of appointing a new one.

Dr. J. D. White, of Phila., being called upon, read to the society, a paper on the Anatomy and Physiology of *Dentine*. This was a tersely written paper, evincing minute and critical attention to the subject which he had taken in hand. We hope soon to have the pleasure of laying it before our readers.

Committee on Townsend's resolutions, reported a series of resolutions touching the necessity and propriety of Dental collegiate instruction, and the establishment of Lecturers, and Professors of this speciality, in the Medical schools of this country, which gave rise to quite a spirited discussion, after which the resolutions were laid on the table.

The committee on Practical Dentistry, asked to be discharged from their further duties, as such committee, and stated as a reason, that the Dental journals and periodicals of this country, were superceding, by their able and judicious publications, any report from this committee, on the subject of Practical Dentistry. They were accordingly discharged.

Dr. E. Townsend, read a paper on the subject of *Professional Fees*. This paper was written in the characteristically elegant style of Dr. T.

and the subject is worthy the attention of the Dental profession. We are promised a copy for publication in the Recorder.

Dr. E. J. Tucker, of Boston, read a paper on the subject of *Dental irregularities*, and fruitful of instruction upon the subject treated, containing many hints of importance to the profession. This paper also, we hope to publish in the Recorder.

Dr. Robertson, of Manchester, N. H., read an essay upon the subject of the influence of diseased teeth and gums upon the general health of the system, a copy of which he has kindly furnished us for publication, and which, when published, we would be glad to see in the hands of every practitioner of medicine.

The thanks of the society were voted to Drs. White, Townsend, Tucker, and Robertson, for their several papers, and copies requested for publication.

On motion of Dr. Hullihen, of Wheeling, Va., voted a gold medal, of the value of \$25.00 be awarded by this society for the best paper upon the cause and treatment of irregularities of the teeth, to be read at the next annual meeting of this society.

The election of officers, resulted as follows.

|                     |                            |
|---------------------|----------------------------|
| For President,      | Eleazor Parmley, New York. |
| 1st Vice do.        | E. Townsend, Philadelphia. |
| 2d do. do.          | J. H. Foster, New York.    |
| 3d do. do.          | J. Tucker, Boston.         |
| Cor. & Rec. Sec'ty, | C. O. Cone, Baltimore.     |
| Treasurer,          | E. J. Dunning, New York.   |
| Librarian,          | D. R. Parmley, New York.   |

Publishing, Executive, and Examining Committees, re-elected.

Drs. Cone, Lord, Hullihen, Townsend, Dunning, and Bridges, were appointed to prepare essays, to be read at the next annual meeting of the society.

The society voted thanks to Messrs. Jones, White, and McCurdy, for their enterprize and liberality, in so promptly and handsomely reporting the doings of the previous meeting at Philadelphia.

#### AFTERNOON SESSION.

Dr. C. O. Cone, of Baltimore, read a paper before the society upon the subject of a new mode of treating exposed Dental Nerve.

The subject was first brought to the attention of Dr. Cone, by a communication from Dr. Hullihen, of Wheeling, Va., who first discovered, and practised the operation some three years ago. At the instance of

Dr. H., Dr. Cone, had been experimenting for sometime past, and minutely detailed his operations and their results to the society in the paper above referred to. And also laid before the society a paper from Dr. Hullihen, relating to the same subject. This subject elicited many questions, and considerable discussion, and the operation by many is regarded as one of the most important steps to which the profession has advanced, in the practice of Dental Surgery; and the commencement of a new era in its history. The operation consists, in drilling into the nerve cavity about a line above the margin of the alveoli, through the gum, and alveoli—*without separating the nerve*, and wounding it as lightly as possible. The drill should be *spear-shaped*—with one cutting edge longer than the other—shaft smaller than the drill head, and driven with a bow, with slack string, and the size of the drill to be the same as the size of the nerve, at the point where the fang is perforated.

The operation is to be performed where the nerve is exposed, in excavating the crown, so as to produce pain and pressure, or, in that class of operations, where the nerve is usually destroyed with arsenic. The results of this operation are said to be the preservation of the vitality of the nerve, instead of its destruction, as in cases where arsenic is used. While at the same time, the operator is enabled to fill the cavity in the crown, without pain, or inconvenience.

Much care is requisite for the success of this operation, and the drill cuttings must be carefully removed from the fang, where the hole is drilled.

This opening, it is said, will fill up with new ossific matter, and the tooth become as sound and healthy as if it never had been wounded at all.

Such, in brief, is our very imperfect description of an operation which opens a new field for experiment, with a fair prospect of success. We expect by no means to do justice to the very able and elaborate report upon this subject, and presume to give the readers of the Recorder merely a general idea of the operation. We hope soon to be able to lay the matter before them in a more complete manner, by publishing the papers above referred to, meantime they must be content with our scraps of memory.

Dr. J. D. White asked the question, whether the object of puncturing a tooth, was to allow the escape of extravasated blood, while at the same time, it admitted a sufficient amount of nerve in the canal, to main-

tain the vitality of the crown? Dr. Hullihen was not prepared to decide the question, but made some suggestions as to the probable physiology of the operation.

After considerable miscellaneous intercourse between members, the Society adjourned to meet at Westpoint the second Tuesday in August next, at 10 o'clock A. M.

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## RECOLLECTIONS OF THE MEETING AT NEWPORT.

The recent session of the American Society at Newport, was one of much harmony among its members, and no little interest to the profession at large. Such a yearly interchange of thought and feeling, on professional subjects, is destined to work out the happiest results, both to the profession and to the public, and mould the character of its members to a certain extent, for years to come.

For two years past, we have been much disappointed in not having the pleasure of seeing several of our distinguished brethren at the annual gathering. And are pained to learn, that Drs. Harris and Westcott, were both deterred from being present with us in consequence of sickness in their families.

We did not obtain a list of members present, but say, that the Society was well represented, as to members, and the interest of its meetings, seems to be increasing.

Some fine specimens of artificial teeth were exhibited among the members, which indicates the persevering application of the profession to this department of Mechanical and Artistic Dentistry.

We saw some very beautiful specimens of Dr. J. Allen's improvement, which, we must acknowledge, exceed anything of a similar kind we have ever seen. Our first impressions of this work were by no means favorable to its success. But it has been vastly improved in almost every respect, since last year, and we are constrained to believe that it is destined to supercede the old mode, altogether. We understand that Dr. Hunter has some fine specimens of a like character, but we did not see them, and of course cannot pronounce upon their merits. Dr. Townsend, of Philadelphia, exhibited some cases of the treatment of irregularities of the teeth, with models, and fixtures, and Dr. E. J. Tucker, of Boston, also—Illustrating the use of gum-elastic rings, of which our impressions are decidedly favorable. Dr. Miller, of Worcester Mass., exhibited some very fair specimens of teeth, set on Dr.

Allen's plan, and has adopted it in his practice. Dr. Palmer, of Fitchburg, Mass., also exhibited some of the same.

Dr. Brewster, of Portsmouth, N. H., presented the members with a preparation for destroying the sensibility of teeth, preparatory to filling them. And also suggested a mode of preparing the German, or Swiss broach—for drills, where a fine elastic drill is needed. This is done, by annealing to a *blue temper*, and then filing down to the required shape. These drills are quite effective, and in consequence of their elasticity, little liable to break.

They are also said to make the very best instruments for removing the nerve pulp from the fangs of teeth, by filing them down to a suitable size, and barbing the edges. They should be annealed by putting them on a hot stove, or furnace—and not in a blaze—a blaze will consume them. Some beautiful instruments were exhibited by Dr. S. P. Hullihen, for performing the new operation, upon the nerves of teeth, now known, as "*Hullihen's Operation*." As also some elegant forceps, of various patterns, for the extraction and removal of teeth and fangs.

Dr. Miller, of Worcester, stated to us, that for two years past, he had been practising this operation, with almost uniform success, without the slightest knowledge, or suspicion that any member of the profession had ever practiced, in the same manner. The only difference in the mode of doing it consisted in this. Dr. Miller passes the drill under the festoon of the gum, and immediately *beneath* the alveolar border, whereas, Dr. Hullihen passes the drill *through* the gum and alveoli.

Such at least, are our recollections. On the whole, we have never seen more of the spirit of enterprize and plodding investigation, than was manifest among the members at this last meeting of the American Society.

The new dental colleges just springing into existence, at Philadelphia and Syracuse, are provoking a noble spirit of professional emulation, and promising at no distant day, to enfranchise the long neglected interests of our useful Art, and to place the profession of Dental Surgery upon a lofty and permanent footing.

The uniform courtesy of the members gave a hearty zest to all their intercourse, and rendered the Session one of pleasure and profit.

Norwalk Editor.



For the Dental Recorder.

## HILL'S STOPPING AND PATENT RIGHTS.

DR. C. C. ALLEN:—I beg leave to trespass on your space and



patience to notice the fuss made by your colleague the "Norwalk Ed." in a reply to an article of mine on Dental Patents, which had the honor of a place in the "American Journal of Dental Science."

The "Norwalk Ed." throws dust in the eyes of the readers of the Recorder by being *very* witty and sarcastic at my expense. As it is possible that he intended his "suspect," "judge that," "be it known," &c. to apply to me, permit me to say that I have never used nor received any personal benefit from any patented dental instrument, mode of practice, or material, his own not excepted; that my attention was called to the subject of dental patents for the first time within eight months, so that none of his comparisons or classic similes can apply to me.

In the article referred to I said that Dr. Hill had acted in a manner unbecoming a professional gentleman, in receiving from various persons improvements infinitely more valuable than his, without recompense, and then turning round and charging them an exorbitant price for so trifling an improvement as "Hill's Stopping;" that the profits on it are about 6000 per cent; that it did not accomplish the effects described; that the patent was wholly null and void; that any one might make the article sold as "Hill's Stopping," and sell without infringement, and several other things of some importance.

Not one of these points does he comment on, nor does he correct a single error in the whole article, but is so careless, or so forgetful of common decency and gentlemanly behavior as to misquote a sentence, (making it read *principles* is, instead of *principle* is, as it is in the Journal,) and then find fault with its grammatical construction! By a mistake of the printer, *neither*, in that sentence was printed instead of *either*, but the mistake was so palpable, that it would pass the impudence of even the "Norwalk Ed." to say that that was the error which he intended to point out, as he reiterates his assertion by referring me to Dr. Taylor's remarks.

I said that Hill's "assertion that the principle of rewards, as shown in medals, diplomas, and copy rights, is either identical, or even in the remotest degree similar to that of the patent system is too absurd to admit of argument." I think so still, but as he refers to Dr. Taylor's argument, which is wholly based on the hypothesis that a copy right and a patent right are the same in principle, I am compelled to take up the argument, although it is ever difficult to prove an axiom.

Dr. Taylor grants "that all remedies for the cure of disease should

become the property of the profession," and applies the same rule to the dental profession as the medical. Now I assert and will ever maintain that the patenting of any thing which is used by the physician or dentist in their respective professions—and which a physician or dentist only is likely to invent or use—by a physician or dentist, is gross quackery and charlatanism; such is the position held by the medical profession at large in reference to itself, and that is the precise ground that dentists must stand on before they can claim a *professional* fellowship.

Dr. Taylor with his miserable specimen of special pleading will not allow any pharmaceutical remedy to be patented, but a surgical or dental instrument may be.

Thus a surgeon may invent a new mode of amputating a limb by means of a peculiar apparatus or instrument; while he cannot patent the mode of practice, he can patent the instrument, without which the operation cannot be performed. Just so with filling teeth. Extracting or inserting. No, my dear Dr. T., you must take the broad platform that I have laid down or your opposition to dental patents exists only in name. For not one-hundredth part of your dental practice is such as to require any pharmaceutical remedy, and yet all the rest may be patented although it is the "curse of the profession to consider it merely a mechanical art."

Surgeons do not patent instruments for removing diseased parts, or remedying defects in the human frame, whether the same be an amputating knife, a splint for a broken limb, or an apparatus for club-foot, any more than a physician patents quinine a specific for ague, or sarsaparilla for all the ills that flesh is heir to, and retain his professional standing. Each is certainly a remedy, and a dentist has no more right to patent any operation in his profession than has a surgeon to patent his mode of performing an operation.

His heavy thunder is that which is generally made use of, viz: a patent right and copy right are identical. Dr. Harris would have had great difficulty in *giving* the MSS of his "Principles and Practice" away if it could not have been made secure by means of a copy right, for otherwise an edition might make its appearance in the market from another publisher, superior to that published under his auspices, and perhaps cause a ruinous loss to his publisher.

Beside when a dentist reads his work, the knowledge contained therein is as much his property as it is that of Dr. Harris, and he can make the same use of it. It is not probable that any of his professional

brethren wish to publish the work; all that they want is to *use* the knowledge. A patent right, however, gives to the inventor a monopoly of his knowledge. To be sure he "may minutely describe his article to you, tell how it is made and used, and he cares not," but he goes further, and says, "you shall not make or use it unless I choose to let you, and I will not let any one in my vicinity, but hold it as an evidence of superiority over all of my compeers." Now is not a patent in this view of it more odious than a secret, the holding of which Dr. T. regards as quackery?

It does not follow that professional improvements should be patented because there is a patent law, as he seems to intimate. The principle which urges us to seek the greatest good of our patients, makes us condemn anything which prevents our being able to confer that "greatest good" upon them. Dr. Taylor says, "we would not throw aside an article because it was patented, but use it," &c.

Why then should he not also say, "we would not throw aside the secret article because it was a secret, but use it, and if possible improve it."

The probability is that he could *purchase* the secret as cheaply as the right to use the patent, and neither can be used without the inventor's permission, unless he should take advantage of a flaw in the specification. Perhaps the "Norwalk Ed's." simile of the cattle and the fence, was drawn out by this remark of Dr. T. But if Dr. Harris has the right to patent every improvement that he may have made, suppose he had done so with regard to all those which were decidedly new when published in his work, and then refused to sell them. Dr. T. has no right to demand that he *shall* sell his property, and according to his theory he would still have the same professional standing that he does now. Do you think so, or does any gentleman in the profession?

But the most ridiculous position that the "Norwalk Ed." assumes is, that his case is an exception to the general rule, because he has a partner who is in no way connected with the dental profession! Why then does he advertise "*Hill's* Stopping," puff *Hill's* Stopping, and defend *Hill* for taking out a patent. I would as soon think of associating an instrument maker with me in the invention of an instrument, take out a patent and screen myself behind him. I am at a loss for words to express my contempt for any such subterfuge. A. Hill, D. D. S. and Fellow of the American Society, has got all the honor (?) of the patent and "Stopping," and will have to "stand the fire."

I think, however, that he is of a very forgiving nature, to pass over such injuries as he complains of, in consequence of such a commendation. If he will read that part again, he will find that it is not so much of a *puff* as he now appears to imagine.

My article has extended to a greater length than I had intended, and for his future effusions, unless they shall contain a better argument than either he or Dr. Taylor ever wrote, I shall consider them beneath even a passing notice.

Yours, very respectfully,

*Cincinnati, Ohio,*

GEO. W. KENDALL.

July 18th, 1852.

### DR. JOHN ALLEN'S VINDICATION.

MESSRS. EDITORS: In order that the dental profession may not be misled with reference to my improved method of mounting artificial teeth upon metallic plates with continuous gums, in consequence of the efforts which have been made to wrest from me my invention and ascribe to others the credit of having originated and developed it, I deem it proper to notice the main points upon which my calumniators have predicated their grounds of opposition and based their hopes of success, without replying to the low slanderous imputations which have been cast upon me for effect, which I regard as unworthy of notice.

The first point attempted to be established was that I was not the author of my invention, and that I was indebted to a Mr. Steemer for it. This I refuted by ten credible witnesses, several of whose affidavits were published. In addition to this controverting testimony, Mr. Steemer finally makes the following confession, and calls witnesses to his acknowledgment, which reads thus :

*"Cincinnati, March 11th, 1852.*

"In justice to Dr. Allen, I hereby certify that I am not the inventor of his new method of setting teeth with continuous gums, and that the first specimens I ever saw of this style of work was at Dr. Allen's office, and this was before I ever attempted anything of the kind myself. And although Dr. Allen did at one time try a compound I made for him, I am satisfied he does not use it in his practice.

"I would further state that the injustice which has been done Dr. Allen through the public press, by misrepresentations, was by the ill advice of others, and I regret exceedingly the injury he has sustained in consequence of my wrong steps in the matter, and I take this method

of rendering to Dr. Allen that justice and acknowledgement which is his due.

"CHARLES STEEMER."

"Signed in presence of

" C. BURCKHARDT,

" LOIS DOER."

Another attempt was made to cry it down for want of strength. As controverting testimony on this point, I have the report of the Mississippi Valley Association of Dental Surgery, in which they state they have tried the strength, and believe that no ordinary force, such as is used in mastication, will break the teeth from the plate.

We have also the report of the Ohio College of Dental Surgery, from which we clip the following extract :

" To give an idea of the unyielding nature of Dr. Allen's cement, we will relate one of the many test experiments made in our presence, in the College Laboratory, by Dr. Allen.

" He took a strip of platina plate, of the usual thickness, and just wide enough to give bearing on its end to two common sized incisor teeth, and about two inches in length. One end of this was turned up, so as to represent the rim of a plate for the teeth. He then set on this two incisor teeth, made (expressly for the purpose of testing the cement,) without platina pins, backings, holes, or rough surfaces for the cement to cling to, and surrounded them with his composition, which was then fused in a muffle.

" When it was cooled it was passed round, with the request that we would pull off the teeth with our fingers. It was first tried by holding the platina strip in one hand and drawing at the teeth with the other, but no one of us was able to affect them in the least in this way.

" It was then passed round with a pair of strong pliers to hold the plate, with the request that we would break them off, if possible, with that advantage. It passed round uninjured by the test.

" It was next passed round with the pliers as before, with the addition of a piece of paper folded over the teeth, so that we might exert our utmost strength on them without hurting the fingers, when it resisted the strength of nearly all present, but at length one of the teeth was broken in two by the force applied, *leaving the cement and that part of the tooth embraced by it still undisturbed on the plate.*

" In conclusion, we would state that we are fully convinced that Dr. Allen is the sole inventor or discoverer of his method of forming Artificial Gums, and that it is not only practical, but highly ornamental and

useful in the mouth, and that it can only be excelled in strength and durability by the best of natural teeth. As to its capability of resisting the actions of the powerful organs of mastication, (from what we have seen;) we do not believe that they would be broken by any effort of the jaws *short of cracking hickory nuts in the mouth, or of biting in two ten-penny nails.*

Signed,

"Thos. Wood, M. D., *Prof. of Anatomy, &c.*

G. S. Van Emon, *Demonstrator.*

Geo. Mendenhall, M. D., *Prof. of Pathology and Therapeutics.*

Jas. Taylor, M. D., D. D. S., *Prof. of Principles and Practice of Dental Surgery.*

"Nimrod Hull, Bainbridge, Ohio. "J. H. Olds, Circleville, Ohio.

I. A. Herring, Kosciusko, Miss. G. L. Paine, Xenia, "

Y. K. Brewster, Belbrook, Ohio. J. C. Whinery, Salem, "

M. N. Manlove, Lafayette, Ind. W. S. Jones, Russellville, Ala.

W. C. Duncan, Cincinnati, Ohio. John H. Williams, Pittsburgh, Pa.

N. P. Allen, Bowling Green, Ky. Jas. T. Irwin, Cincinnati, Ohio.

A. L. Duyers, Greenfield, Ohio.

"P. S. The above communication was written and signed without Dr. Allen's solicitation, as a voluntary tribute from his colleagues and students. T. WOOD."

In addition to this we have the testimony of some sixty dentists, who have adopted it in their practice, and hundreds of persons who are now wearing this style of work.

Again, it has been stated by my opponents that I am indebted to M. Delabarre for my information upon this subject. This is not so. If M. Delabarre had developed and published a *practical* principle touching this matter, why has it never been carried out before? It would have saved me from much odium that has been attempted to be cast upon me for having brought to light that which, until now, has remained obscure.

It has been stated that Levett is the author of it; this is also controverted by numerous witnesses who had seen specimens of my work before Levett's *enamel* was announced. Levett's object was to cover the *plate* with a very thin coat of varnish or enamel, which flowed at a very low heat by the aid of a common lamp and blow-pipe. My object was to form an artificial gum, strong and solid as the teeth, with strong cohesive properties with which to unite the teeth and plate firmly to each other, which requires a white heat in a furnace to fuse it, speci-

mens of which I showed to Levett's agent, when he first called at my office.

I tried some of Levett's preparation for coating plates, by way of experiment, but never adopted its use, nor made it a feature in my practice, as has been asserted by those who would give any one the credit of my invention rather than me. Failing to establish either of the foregoing positions, another effort was made to show that Dr. Hunter was the inventor. This claim was predicated upon the ground that he had (subsequently) made an alleged improvement in block-work, which consisted in uniting single teeth to each other, thus forming a block which after being fused and cooled, was then soldered on the plate, leaving the teeth and gum disconnected with the plate, which not only admits of more or less secretions, but fails to impart that additional strength and cleanliness to the denture, which a perfect union of the teeth, plate, and artificial gum secures. It is therefore upon this single feature that the whole of my invention has been claimed. But this claim is set aside, first, on the ground of priority, as shown by numerous witnesses, and second, by Dr. Hunter's disclaimer, which may be seen on page sixty-six in the sixth vol. of the Recorder, which reads thus:—"I would simply state that I do not claim the improvement that consists in sticking teeth to the plate." Here he disclaims one very important feature in this improvement, which consists in uniting the teeth and gum firmly to the plate.

Again he says on page sixty-four, that platina only can be used as a base with certainty, other metals being liable to warp, and this metal being of a soft nature, no great strength can be looked for in it. Here he denounces another important feature in this method of mounting teeth. Platina is preferable to any other metal as a base for this style of work, even where other metals are to be used. It is better to mount the teeth first upon a thin platina base, and then transfer them upon gold, or other plate, as may be desired. Again he says—a fracture, once occurring, what are the means of repair that will prevent a recurrence of the evil? Here he betrays ignorance; as to this method, for a fracture is very easily repaired, but at that time he did not know how it was to be done. But now, after having sent to Washington, and obtained the specifications, he claims it as his own, and says he will use it, and encourages others to do so likewise. He is not the first who has bid defiance to the laws, nor will he be any better able to avoid the consequences by disregarding them, than others have been who have at-

tempted to set them at defiance. There are some who honestly suppose that inasmuch as they, or somebody else, had seen the necessity for a certain improvement, and had made experiments with a view to accomplish it, although never carried out by them, and brought into public use, will serve as a bar to a patentee who *has*, from sustaining damages for infringements.

In order, therefore, to correct this false impression, we would refer to the law upon this subject, which reads thus :—

By the Act of 1836, section 6, patents were granted for any new and useful art, machine, manufacture or composition of matter, or any new and useful improvement on any art, machine, manufacture or composition of matter not known or used by others before the applicant's discovery or invention thereof, and not at the time of his application for a patent; in public use, or on sale, with his consent or allowance as the inventor or discoverer, but by the act of 3d of March, 1839, no patent is held to be invalid, by reason of the purchase, sale, or use of the invention, prior to the application for a patent, except on proof of abandonment of such invention to the public, or that such purchase, sale, or public use, has been for more than two years prior to such application for a patent.

The law, therefore, does not recognise the claims of experimenters who have failed to bring out practical improvements. On the contrary, such persons are barred on the ground of abandonment, after two years from the time of their experiments, from setting up subsequent claims that can effect a patentee who has developed and brought into public use that which may have been tried by them, but not rendered practical.

In view of the above considerations, together with the efforts which have been made to wrest from me my invention for mounting artificial teeth upon metallic plates with continuous gums, I forewarn all persons from trafficking, or in any way infringing upon my rights as patentee for the same, as I will most positively protect my patent.

J. ALLEN.

## OUR DENTAL COLLEGES.

We have received the annual announcement of four Dental Colleges in the United States, and the only institutions of the kind, with which we are acquainted in the world. Three of these have previously been in operation, viz: The Baltimore, Ohio, and New York Dental Colleges, located at Baltimore, Cincinnati, and Syracuse, respectively. And one to commence operations this fall, to-wit, the Pennsylvania College of Dental Surgery, located at Philadelphia.



Each of these several schools, present a bill of fare, which would have made our heart dance for joy, if it could have been presented to us at the commencement of our professional career, and which cannot fail to be most grateful to the ardent desires of the young men, who propose to make the practice of Dental Surgery the business of their lives. The several Professorships of these colleges are mostly filled by men of decided eminence in their several departments, and generally well known to the profession, and community, as every way qualified to meet their just expectations.

And the curriculum of Dental studies embraced in the several departments of these schools is so liberal, as if carried out, silences forever the objection, that the "so called Dental Colleges" are "altogether inadequate to the wants of the profession."

We cannot but feel a just pride, that we have *four Dental Colleges* in this country, now in full blast, with talent, ambition, and liberality enough among the several corps of professors, to place the question of the advantages of Dental Collegiate instruction forever at rest.

And we are heartily glad that the profession in this country, have taken the initiative in this great movement, which is *surely* destined to elevate the meritorious and worthy among them, and reflect lasting credit and honor upon those to whose zeal and enterprize the public are indebted for these advantages. And we regard an honorable rivalry between them, as the surest pledge that can be given, of their ultimate success and permanent usefulness.—NORWALK ED.



## HINTS TO THOSE THAT NEED THEM.

A few days since a gentleman called at our office, by request of his dentist, and desired us to examine his teeth, which the said dentist had filled at various times during the past three years. We examined them, and found the fillings tolerable, but as the dentist made a special request that he would call and show them to us, and as he knew that we always took special pleasure in looking at handsome gold fillings, it is probable that he thought these very superior, and imagined that they would not only afford us great pleasure, but also elicit high commendation of his very superior workmanship. Alas! we could not gratify him. We have long known that many operators upon the teeth were ignorant of their own true position as dentists, supposing that their skill is preëminent, when it is not above, and perhaps is far below, mediocrity.

This may arise from an inordinate self-esteem, or ignorance. When from the former we may as well give them over at once, for there is no hope of a man's improving who already knows all; but when from the latter cause, it becomes all, who, if they remain in practice, must rise or fall as "the profession" rises and falls in the estimation of the public, to lend a helping hand to such as honestly desire to improve their work, though they may not have gone through with what is now generally considered the regular course of dental instruction. As long as such operators remain in practice, no matter how poor their operations, they are still classed by the public with dentists, and reflect credit or discredit upon the whole profession. We say then, that both policy and benevolence indicates that we should all assist such operators as far as we have the opportunity and ability to do so, to improve the style and usefulness of their operations. With a view to this object we shall venture a few criticisms on the fillings of our friend.

The first thing which struck our notice was a want of fullness in the fillings on the approximal surfaces of the superior incisors. In some of them this was so apparent as to make the teeth appear as though they had not been filled at all, and this deception was more strongly marked from the want of a smooth finished surface to each filling, which cannot easily be obtained when the cavity is not full; but if the filling, after it is thoroughly condensed project slightly beyond the edges of the cavity, it can be filed smooth, and when burnished and polished will present a beautiful even surface, like solid gold.

Turning to a neighboring cusps, we found this too full so as to make the gold very conspicuous every time the lip was raised, and prevent a sufficient space for cleanness between it and the lateral incisor. The same fault existed in the fillings on the approximal surfaces of the molars and bicuspides, which would have been removed by passing a file between them as far towards the gum as the fillings extended, leaving the teeth to touch each other beyond this point; this would have ensured the fillings many years longer than they will last without it, as they always begin, sooner or later, to decay at a point of the filling nearest the gum when too near together.

The fault of too prominent fillings was also apparent in the grinding surfaces of the molars. Although we much oftener see these fillings below the surface of the enamel (and this is much worse than to see it above) yet it is a fault to have it project too far. No better rule can be adopted than to restore as far as we can the original form of the

tooth; we like to see something of the natural indentations upon the grinding surface of the molares, which answer the same purpose in grinding our food that the grooves or pores in millstones serve for grinding grains for meal or flour.

We observed several fillings on the labial surfaces of the teeth, some of them extending under the free edge of the gum. These, also, were too full, projecting above the neck of the tooth beneath the gum. This is a common fault with the work of many dentists who take great pains to condense their fillings, but spend little time in finishing the surface. It is highly important that the fillings on the labial surfaces of the teeth and near the neck should be finished level with the surrounding surface of the tooth; otherwise a lodgement of food is sure to take place at this point, and produce subsequent decay, while the projecting edge of the gold will keep up an irritation in the surrounding gum.

All these fillings were very solid and will be apt to stand for a long time, and give great satisfaction to the patient, but they all lacked the finish which characterises the work of the true artist of the present day. Twenty years since, when three quarters of all the fillings put into the teeth were soft and crumbling, these would have been pronounced "first rate," but onward is the watchword, and beauty of finish is now demanded as well as condensation of the material. Besides, the durability of the stopping depends much upon the finish of the surface, which should always be as smooth as possible, and correspond to the surrounding portion of the tooth, so that the ordinary friction of the food while eating, and the motion of the tongue and lips will serve to keep them free from all foreign substance. We have thus pointed out a few of the common faults of a class of dentists who spare no strength while "stuffing" a cavity, but neglect to finish the work in a neat and artistic manner. They are generally rapid operators who, with a single eye to their patients good, have two to their own.

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### DR. HUNTER'S IMPROVEMENT.

During the present month Dr. Wm. Hunter, of Cincinnati, has been in our city and demonstrated his improvements to several dentists. With a liberality unparalleled in the dental profession, he has authorized us to announce that the next and succeeding numbers of the Dental Recorder will contain a full and clear description of the *modus operandi*, formulas, and all other information necessary to enable any dentist to adopt this style of work in his practice.

# NEW YORK DENTAL RECORDER.

Devoted to the Theory and Practice of  
SURGICAL, MEDICAL, AND MECHANICAL DENTISTRY.

Vol. VI.

SEPTEMBER, 1852.

No. XII.

## ESSAY ON PROFESSIONAL FEES.

*Read before the American Society of Dental Surgeons, at their Annual Meeting at Newport, R. I., Aug. 5, 1852.*

BY PROF. E. TOWNSEND, M. D., D. D. S., OF PHILADELPHIA.

*Mr. President and Gentlemen :*

At your last annual meeting, held in Philadelphia, you did me the honor to invite me to prepare and read before this association an essay on some subject connected with the theory and practice of Dental Surgery, at its present meeting.

In answer to this call I appear before you, and will endeavor to give you such reflections as I have, upon a subject intimately connected with the practice of Dental Surgery, and having *perhaps* a greater bearing upon its respectability and the worth and talent to be employed in its future cultivation than may at first sight be imagined. I have chosen for the subject of my reflections, *professional fees*, and hope it "will pay" for the time and attention required. The word fee is properly used to express the compensation, reward, or acknowledgement of services of the more honorable kinds, in contra distinction to those which are merely laborious, and whose motive and equivalent are alike expressed by the word *wages*. The usages of language make nice but suggestive distinctions, which will serve for useful hints in the matter in hand. Thus we speak of the *price* of commodities, the wages of labor, the hire of servants, the *salaries* or stipends of Governors, Judges, settled Clergymen, and teachers, when their recompense is paid for fixed periods by previous stipulation, and limited by formal contracts. But the freer and more voluntary remuneration of physicians and lawyers is always called a fee, or *honorarium*, because, beside the idea of being given as a token of respect, and not as a complete equivalent. Indeed, the primary meaning of the term was rather that of a gratuity, or a cordial acknowledgement for liberal and noble services. The Roman patron actually received no money reward for his services to his client, and to this day an action at law cannot be maintained in

England for the fee of a physician or counsellor, so strong seems to have been the feeling that the exertion of talent and skill, without measure, the dedication of the life to an arduous and responsible profession, and the sympathies and confidences which bind the parties together, should be wholly honorary, both in the benefits conferred and their substantial acknowledgement. And there is at least this much reason in the rule, that as the law cannot prescribe or *exact* the excellence of the services expected, so it will not attempt to enforce the gratuity deserved.

But whether this refinement has given way before the ruder necessities of business for good reasons or not, it is nevertheless obvious that a professional fee has in it something more than an equitable return for labor and time. Something of an appreciation tribute to talent, skill and care, which cannot be the subjects of contracts and do not admit of a market value estimate. I do not intend to say that men should be governed exclusively by their highest motives, for they have many necessities; but only that all should be respected, and the noblest should form the standard. Some of our interests push us into action without our will, some invite us in accordance with our tastes, and, the public has requirements, besides, which we must honorably meet. It is happily true, also, that every business necessary to the individual has, in its degree, some worthy connection with the world's wants and welfare, which give occasions for the union of noble and generous sentiments with the pursuits of private benefits. There are two parties always immediately concerned in professional relations, the individual and his assortment of clients or patients, and a third is never lost sight of by right minded men, that abstract and impersonal, but very real party, which we call the world, society or humanity.

Each of these has proper claims to be provided for and duly considered, and there is no department of professional life and duty which has not its bearings upon them all; even the matter of fees will be found upon full examination to rank high in the policy of professional conduct, notwithstanding the mere mercenary element; when we endeavor to base a system of compensation upon principles of even justice to all parties and wholesome influences upon all the interests involved. There is nothing absolute or intrinsic, it must be remembered, in price or value, however essential or ordinary the subject may be: especially there are some things that are never sold and there are some others for which no adequate return can ever be made. Commodities are valued at the cost of their production, modified by demand and competition, but ser-

vices admit of no positive rule. The lower kinds of labor are sold and exchanged for such price as is supposed to compensate the physical toil which they require; bones and muscles need nothing but food and raiment, and for their use, their sustenance and comfort, is perhaps a fair equivalent, but, as we ascend among the imponderables which the arts and sciences bring into the market along with the materials which they employ, weight and measure, cost and worth, grow more and more out of the reach of commercial arithmetic. Stock brokers and merchants, though much given to speculation, would be puzzled to fix a rule for the appraisement of the statues of Steinhauser, the songs of Jenny Lind, or the pictures of any of the old masters, and it is even more emphatically true, that, where extraordinary talent and high training are combined with best moral qualities in the practice of a liberal profession, nothing which the recipient can pay, in anywise measures the value of that which he receives, whether we estimate it by the use it serves, or, by the qualities of head and heart which it requires; such is the verdict of the patients themselves, who are best able to judge, though they are also most interested in a moderate valuation. Indeed, it may be stated as a rule that low fees are paid with the least cordiality, because they are the price of the most ordinary grades of benefit, while high fees bring along with them the liveliest emotions of appreciative regard, for they are the acknowledgement of highest services and most valued reliefs. The avocations which require high talent and skill, imply the cost of previous education and practice, and all the dedication of time and denial of self which eminent attainments demand. There is a condition of labor in which the man and all his faculties are surrendered to the masterdom of another, but, if such surrender of self and life and powers to the advantage of others were the only idea in the word *slave*, the artist, scholar, and man of science, would deserve it much more absolutely, for his abnegation is as entire, and the faculties offered in sacrifice are infinitely greater, and the zeal of his own enthusiasm fires the gift upon its altar. His devotion knows no limits, his service no holidays, and if he receives the means of luxurious living from those he serves, it is most generally at the expense of relinquishing the opportunities of their enjoyment. It is in some perception of these hard conditions, that the public accords to professional men, rates of remuneration which compare so largely with the wages of ordinary labor. The thought is that they should have the means of such accumulation as will at some early day give them their chance of individual life,

so well earned, and for whose enjoyment their capacities are so highly cultivated. Besides there is a tacit expectation that in any position they may attain, they will be taxed with the toil and expense of that general progress of society which they are so well fitted and so well disposed to promote—whether the entire philosophy of the principle is composed or not, there is always at least an intrinsic feeling even in the least reflecting, that large rewards to eminent talents are completely justified. People *may* higggle about the price of commodities in the market place, but they are generally too wise to purchase *cheap* talents when great interests are at stake. Moreover, the *unprofessional* man needs an *insurance* as much as he needs the reliefs and services, and he is willing to give as much or more for *that* as for the substance of the service itself. Nor is such an investment either improvident or unwise. Such reflections suffice to show that there really is no intrinsic limit to the price of professional service, and no external standard by which its absolute value can be measured: yet it has its limitations, in fact, and these are found in considerations which are consistent with its honor, and attention to its necessities, while they restrain the justice of its demands. These considerations are, the fair and comfortable ability of the client or patient to afford a living remuneration for the benefit which he receives. He pays not what he owes, but what he can, and what the operator needs according to the usual average of their respective conditions in society. There is no other rule than that of such accommodation, for there is no principle of price in the transaction. Hence the usage of large fees from the wealthy, and less from the less opulent, and gratis services to those who are quite unable to meet the lowest rates which it is creditable to receive. This doctrine also makes room for those in every profession who address themselves purposely to practice less liberally remunerative than the highest grade; for, the whole matter of fees stands upon a sliding scale of compensating adaptations, and the true principles of charge make safe and convenient provision for every sphere of practice—with this difference, be it observed, that the nearer the summit of the scale, the more nearly are all the highest conditions and requirements of duty met and provided for, on the lower side of the medium all the danger lies, above it are all the best securities for all the interests of all parties concerned. Still no principle is violated while the lowest limit of respectability is avoided.

In that sort of labor which requires but little natural skill and *no* learning, underworking is destructive to competitors, for price is the

only point in which their rivalry has play, and abatements there, work unavoidable mischief and strikes, and violence against offenders are the *only* remedies, however ineffectual they may be. It is not so in occupations where skill and education have an indefinite power of making and marking distinctions among the candidates for business. The better qualified are relieved, in great measure, from the mischief of undercharging by others, except in those departments of their calling which are either really or apparently easiest of execution. The better qualified men are injured, indeed, by such improprieties in their "*esprit du corps*" their common profession is deteriorated, and the public is wronged, but they suffer no special individual injury, and may therefore be regarded as wholly unselfish in any solitudes they may have for reform: with the unreflecting and incapable they will not succeed, but such loss they can well afford, their resource is in still higher and higher attainments, and correspondingly higher charges, and the path of duty and honor happily points in the same direction. The quarrel about low prices may be left in the hands of those who are contented with mere respectability in their profession, and those who are desirous to sustain its dignity and secure their own ease merely on the ground of dignity without its proper excelsior spirit of achievement. If any one says "I am undersold by my neighbor in the same business," the answer is, bring to market products which no man can sell for less than your demand and your complaint is cured. If it is wares or work, only, that you have for sale, you must meet competition by cheapening the cost of production, but if it is talent and the attainments of study and discipline, then make them richer and dearer and your success is certain. This is the natural reward of progress, and the appointed discipline to effect it. I have, therefore, nothing to say against low charges, except what stands of itself as the *per contra* in the account I would open to the credit of high rates; to which, for a moment, I now ask your attention, and the inferences to make good whatever complaint really lies against the opposite policy and procedure.

First. Liberal rates of professional fees are justified against the charge of extortion; for, no wrong is done to the patient so long as the opportunity of choice is left freely open to him. In our profession this is always the case, and the two parties to the business bargain are both equally in condition to take care of themselves, and their own interests, and may therefore be trusted with them, without appealing to any other body's conscience or opinions. I do not say, however, that the posses-



sor of a rare excellence, or a happy discovery in his art, may hold its benefits at a *killing* price ; but we can, nevertheless, leave him to his discretion, if he happens to be insensible to liberal feelings, for the world will manage to get along without the man who is unwilling to serve it on conscionable terms, as it did before he or his discoveries were known, but thanks to the mutual dependency of all men, we need not fear so hard a bargain as this, nor provide against it for the individual's interest is concerned in a ready acceptance of what he has to offer to the world, and so there are always two parties to the bargain, to keep the balance level. Fees are thus secured against excess, and, they are still further limited by the competition of equal ability in the same vocation, and if every thing else failed they would be held down by that sufficiently resolute self-interest which in every thing resists exorbitancy, and thus we may dismiss this aspect of the question, and turn to that view of it which warrants and enjoins a high standard for remuneration. In the first place, our profession notoriously needs the general character which fair self-appreciation may help to give to it. It is but one branch, and as yet the only branch of surgical art which is separated from the others in practice, for this reason it is held in the *public* opinion to be the simplest of them, and separated for that simplicity and its supposed remoteness from the general healing art. The better thinkers see in this the fact that it is only the first to give to itself a proper distinctness of culture and the opportunity of such distinguished advancement as concentration upon a speciality is known to confer upon all the pursuits of men, which have much importance and complexity. In the judgment of the most capable, therefore, it is in no danger of such misconstruction ; but it remains for the faculty to take care of its rank and standing with the general public by charging up to the level of its real professional dignity, that the science, skill and responsibility in it may be felt in all the claims which it justly advances for popular estimation.

Second. On the sheer ground of pecuniary equity. The remedial treatment of diseased teeth, and their connections, has now reached a point which is a surprise to the most distinguished professors of general medicine and surgery. They find the most recondite principles of the parent science, and the nicest skill in treatment in familiar use in our improved practice, and they are our witnesses that the same talent, perseverance and devotion are employed upon the teeth that the Oculist, the aurist and lithotomist require in their older and better appreciated surgery. The claim to equally liberal remuneration is, therefore,

well founded in the equal character of our professional qualifications, and the equal value of our operations. Our vocation is no longer merely mechanical, but strictly professional, and is entitled to all the rank and rights thence resulting.

Thirdly. Every practitioner of eminent competency knows that the required attainments are only to be had through such study, observation, training and practice, as must have for their inducements and reward handsomely liberal emoluments, or the profession can neither enlist nor develop the requisite abilities within its ranks. Talent sure of higher consideration and better recompense elsewhere instinctively avoids a beggarly and depreciated occupation. A business must pay the highest remuneration in respect and profit, if it would secure the highest qualifications in its membership. Modesty and moderation in some things is commendable, because they hit the mean between extremes. Liberality in compensation, taking human nature as it is, and human things as we find them, is the only means of improvement in practice, and progress in knowledge of a growing profession. Let the men who are in a position to answer our highest expectations establish such ample rates for their best work, that they, and those who are to come to them, may be able to indulge their ambition for superiority, and cheap wages and cheap work, whether banished or not, will cease to be a reproach to our profession and an impediment to its advancement. We want men of genius more than we want anything else, and the public both wants and knows this want also, and will gladly stand the tariff of protection which will encourage their production. The laws of human nature remaining the same, niggardly wages must be the parent of corresponding meanness of desert. A man has but little critical ability in dentistry, who cannot distinguish a dollar plug from a five dollar filling, by examining it in the patient's tooth, without further scrutiny, and we all know that he is either a very poor man, or a very poor economist who chooses the cheaper article of the two. There are too many nice points in the operation and too many drafts upon the time and patience of the operator, to put him with safety to the patient upon two or three dollars a day, even with roast beef added, which he will not have the leisure to enjoy, or the vigor to digest. For the sake of the profession's advancement and the patients real interest, it is well to compensate five times the skill and care which the lowest rates will any way allow. Let it be understood here, distinctly, that I am not censuring, much less despising, the more moderate rates of charging,

which are also more general, so long as they are kept anywhere within the limits of respectability, and the work done under them does nothing specially to discredit the profession. There is a large amount of Dental practice which demands only middling merchantable sort of work, and it would be vain, if not unjust, to deny it. The question in that quarter lies between the patient and the practitioner, and *they* must settle it. Neither party is responsible to the progressive wing of the profession. I am only insisting that there shall be such a wing and offering the argument for it which presents itself. Our profession, like those of law, medicine, and divinity, has room for considerable variety of ability, and even demands considerable accomodation to its varied objects, so that we might be divided into several groups without at all severing the fraternal unity. Let there be no unwarrantable envy and no revenging scorn amongst us. The moderate party suffer nothing in business by the competition of the more exacting, and they, in their turn, should not complain on their own account, while they can maintain their own position, however, for highest and unselfish reasons they could wish it otherwise throughout the brotherhood. There is no danger that the less ambitious practitioners will be tempted to pretensions in the matter of fees above the value of their works, the imposture is too open to observation for that, and, what is still better, the higher price would most generally tempt to better deserving by compensating it, and so the right is tolerably well secured and the wrong prevented. And on the other hand, there is fortunately enough of strength in the faculty and enough of its proper enthusiasm among the aristocrats of price, to sustain the aristocracy of talent if they have it, if they have not, the descent is alike easy and inevitable, for life and business have their natural laws, which will be obeyed where they are resisted. The only evil is in not discovering them soon enough, or understanding them well enough to get their greatest benefits. There is yet another point which must not be overlooked. I have spoken of liberal compensation as a *condition* of professional advancement, a *right* of the meritorious practitioner, a duty and interest of the patients, and a point of *honor* to the profession. These all bear upon the pecuniary reward of valuable services, and this is open to impeachment by that spirit of selfishness in criticism which has the knack of finding its own ugly features most prominent in every bright object which it gazes at, but even this money claim ministers to another motive and higher style of reward than envy and suspicion can touch with depreciation. I allude to the leisure and the opportunities

which ample resources afford for the generous employment of professional skill in cases of worthy persons who can afford us only the pleasure and the pride of professional munificence in compensation for the benefits bestowed. There are men in the fraternity who would feel the restraint of circumstances in this respect as sharply at least as in the meagreness of income which compelled it. No profession is honorable, or dignified, or happy, that does not provide for the very many instances in which the finest feelings of our nature ask to be indulged in liberal deeds. Indeed there are not a few instances where only medium charges can be made with comfort to the patient, where yet extraordinary pains and skill and time, are taxed to meet the necessities of the case, and gratify the operator's pride of excellence in his work. A tariff of prices that makes no room and provides no possibility for occasions which so frequently present themselves in every good practice, must drive every gentleman from the fraternity, or sink him in his business below the standard that he would proudly prescribe for himself as a man.



## A NEW METHOD OF SUPPLYING ARTIFICIAL TEETH AND GUMS.

BY WM. M. HUNTER, DENTIST.

“Is there any thing whereof it may be said, see, this is new?”

In the following pages I do not know that I shall give any thing new to a certain class of readers, but I feel convinced that the better informed of the practitioners in our profession, will find a practical elimination of good from old ideas.

To Delebarre must be given the credit of having first conceived and executed the union of artificial teeth already baked, with an artificial gum and plate. Vide Fitch's Dental Surgery, 2d ed. Phil. 1835, which, I believe, contains the only English translation of that portion of his work.

To Audibran must we give the credit of having first made the claim so far as I am informed, of having overcome the shrinkage of material, which claim was made in his published work, and was contested twenty years after by Lefoulon, but which principle is claimed by no other author. To Audibran I acknowledge my indebtedness for the idea of granulated body.

Desirabode and Lefoulon both give Delabarre credit for having done

this kind of work, and publish his formula, the principle of which consisted in uniting a *flux* with the material used as an ordinary *base* or body, that it might fuse at a less teeth than the heat then in use.

Where is the new principle, in the patent claim now made? A flux is combined with what is technically termed a body or base, and the application is in every respect similar.

I stand upon the ground that I have perfected a body, (as applied to certain bodies and enamels made into artificial teeth by Jones, White and M'Curdy,) which does not materially contract in the fire, and possesses more strength than any other body known to me, and which, with skillful handling, requires but one heat independent of the soldering of the teeth to the plate, to make perfect work.

It is applicable to the ordinary gold plate as used by dentists, generally in the form of *block-work*, and is made by me in continuous arches where a full denture is required, and it is equally applicable to cases where a few teeth are required, and can be fastened to the plate by soldering, riveting, or any other known method now in use. I also use it on an alloy of gold and platina, 20 and 22 carats fine, both in full arches and in partial sets. It is also applicable to platina plates for full arches, and as there has been a claim recently made for the application of platina for dental bases, I quote from Desirabode as published nearly thirty years ago. "It has not been a century since platina (vulgarly called white gold) has been known, and it has not been more than forty years employed by dentists. Its discovery and introduction in the arts has been a valuable resource because it possesses great consistence, although very maleable; and it is least of all mineral substances, affected by chemical agents and by buccal humors." The same author goes on to say that "M. Delabarre, finding that 20 carat gold and even platina alone are too ductile for certain purposes, and which he wished to have as solid as 18 carat gold, has proposed to make a double plate of platina which has all the solidity of the former." He still further goes on to describe the best methods of soldering platina, and speaks of the system pursued by other dentists of his day. So it will hardly do to set up the claim for novelty at this late date; the *patentee* however, is excusable, for as he does not read, he presumed that it was original in the *practice* from which he pilfered it, and so *originated* it.

Since I first put work into the mouth my modes have changed very much, my first efforts being made at a very high heat thinking that a material of the requisite strength could not be made at a low (say the

melting point of gold) heat to stand the fluids of the mouth, but which hypothesis I have found to be fallacious.

In 1849 I purchased recipes of Dr. E. Wildman of Philadelphia, whom I look upon as one of the most scientific men in the plastic department of our profession, which opened to me a new field of experiment and enabled me to perfect the work at a low heat, his *principles* of compounding and preparing being of great benefit to me.

I will now proceed to the description of the materials used, and the various compounds.

SILEX should be of the finest and clearest description, and kept on hand ready ground, the finer the better.

FUSED SPAR should be the clearest Felspar, such as is used by tooth manufacturers for enamels, completely fused in a porcelain furnace, and ground fine.

CALCINED BORAX is prepared by driving off the water of crystallization from the borax of commerce, by heating in a covered iron vessel over a slow fire, and it is better to use immediately after its preparation, as it attracts moisture. It should be perfectly clean and white, and free from lumps.

CAUSTIC POTASSA OPTIMUS. Known also as Potassa fusa.

ASBESTOS. Take the ordinary clean asbestos, free it from all fragments of talc or other foreign substances and grind fine, taking care to remove any hard fragments that may occur.

GRANULATED BODY. Take any hard tooth material (I use the following formula: spar 3 oz., silex  $1\frac{1}{2}$  oz., kaolin  $\frac{1}{2}$  oz.) and fuse completely. Any very hard porcelain, wedgwood ware, or fine china, will answer the same purpose. Break and grind so that it will pass through a wire sieve No. 50, and again sift off the fine particles which will pass through No. 10 bolting cloth. It is then in grains about as fine as the finest gunpowder.

FLUX. Upon this depends the whole of the future operations, and too much care cannot be taken in its preparation. It is composed of silex 8 oz. calcined borax 4 oz., caustic potassa 1 oz. Grind the potassa fine in a wedgwood mortar, gradually add the other materials until they are thoroughly incorporated. Line a hessian crucible (as white as can be got) with a pure kaolin, fill with the mass, and lute on a cover a piece of fire clay slab, with the same. Expose to a clear strong fire in a furnace with coke fuel, for about half an hour, or until it is fused into a transparent glass, which should be clear and free from stain of any kind

more especially when it is to be used for gum enamels. Break this down and grind until fine enough to pass through a bolting cloth, when it will be ready for use.

**BASE.** Take flux 1 oz., asbestos 2 oz., grind together very fine, completely intermixing. Add granulated body  $1\frac{1}{2}$  oz. and mix with a spatula to prevent grinding the granules of body any finer.

**GUM ENAMELS.** No. 1: flux 1 oz., fused spar 1 oz., English rose 40 grains. Grind the English rose extremely fine in a wedgwood mortar, and gradually add the flux and then the fused spar, grinding until the ingredients are thoroughly incorporated. Cut down a large hessian crucible so that it will slide into the muffle of a furnace, line with silex and kaolin each one part, put in the material and draw up the heat on it in a muffle to the point of *vitrification* not *fusion*, and withdraw from the muffle. The result will be a red cake of enamel which will easily leave the crucible, which after removing any adhering kaolin, is to be broken down and ground tolerably fine. It may now be tested and then (if too strong a color) tempered by the addition of covering. This is the gum which flows at the lowest heat, and is never used when it is expected to solder.

No. 2. Flux 1 oz., fused spar 2 oz., English rose 60 grains. Treat the same as No. 1. This is a gum intermediate, and is used upon platinum plates.

No. 3. Flux 1 oz., fused spar 3 oz., English rose 80 grains. Treat as the above. This gum is used in making pieces intended to be soldered on, either in full arches or in the sections known as *block-work*. It is not necessary to grind very fine in preparing the above formulas for application.

**COVERING.** What is termed covering, is the same as the formulas for gum, *minus* the English rose, and is made without any coloring whatever when it is used for tempering the above gums which are too highly colored, and which may be done by adding according to circumstances from 1 part of covering to 2 of gum, to 3 of covering to 1 of gum, thus procuring the desired shade. When it is to be used for covering the base prior to applying the gum, it may be colored with titanium, using from two to five grains to the ounce.

**INVESTIENT.** Take two measures of white quartz sand, mix with one measure of plaster of paris mixing with just enough water to make the mass plastic, and apply quickly. The slab on which the piece is set

should be saturated with water to keep the material from setting too soon, and that it may unite with it.

**CEMENT.** Wax 1 oz., rosin 2 oz. The proportions of this will vary according to the weather; it should be strong enough to hold the teeth firmly, and yet brittle enough to chip away freely when cold. A little experience will enable any one to prepare it properly.

Platina as usually applied I think objectionable, wanting stiffness; my method of using it is similar to that proposed by Delabarre, but possessing greater strength than even his method, and by it can be made as light as a good gold plate got up in the ordinary way. I first strike a very thin plate to the cast, and cut out a piece the size of the desired chamber, taking care not to extend it forward to embrace the palatal artery. Add wax to the plate for the depth of cavity, diminishing it neatly as it approaches the alveolar ridge. Cement this plate to the cast and take another metallic cast, strike another thin plate over the whole, and solder throughout with an alloy, of gold twenty two parts, platina, two parts, or with pure gold. The chamber thus formed is precisely the same as "Cleaveland's Patent Plate," but the space *between the plates*, for which he obtained his patent, is subsequently filled up, leaving a cavity resembling Gilbert's, but with a sharper edge when so desired. This space is filled up with base and enamel, and gives great stiffness without the ugly protrusion of the struck chamber. The plate thus formed assimilates much more closely to the palatal dome, not interfering with pronunciation; another great advantage gained by it is the impossibility of warping. I say *impossibility*, because I have submitted plates so constructed to the severest tests, and never had them to warp. It is well to rivet the two plates together before proceeding to solder, especially gold plates, and to bring the heat carefully upon them; once prepared there is no danger of change in the succeeding manipulations. I strike up the lower plate with a band on the labial edge about one sixteenth of an inch wide. This I do by trimming the wax impression before taking the plaster cast, or by building a ridge of wax on the plaster cast before taking the metal casts. Should the band (or turned edge) flare out too much, it may readily be bent in with a pair of pliers, etc. This style of work should not be applied except where the absorption may be said to be complete.

After the plates are perfectly adapted to the mouth, place wax upon each which trim to the proper outline as regards length and contour of countenance, marking the proper occlusion of the jaws and the median



line. These waxen outlines are called the *drafts* and are carefully removed from the mouth, and an articulator taken by which to arrange the teeth.

When the absorption is considerable and the plate in consequence is rather flat, it is necessary to solder a band or rim along the line where the upper draft meets the plate, about one sixteenth or one eighth of an inch wide, and fitting up against the outline of the draft. When the ridge is still prominent, the block will not of course be brought out against the lip so much, and a wire may be soldered on instead of the wider band. I think one or the other necessary, as it gives a thick edge to the block, rendering it far less liable to crack off than if it were reduced to a sharp angle; it also allows the edge of the plate to be bent in against the gum, or away from it, as circumstances may require, and afford in many cases a far better support for the plates than can be given to one in which the band is *struck up* or the edge turned over with pliers, where the block must extend to the edge of the plate. Some few cases do occur when the band may be struck as far back as the bicuspid with advantage, and some in the lower jaw where it is necessary to solder on the band, but the general practice is not so.

The upper teeth are first arranged on the plate antagonizing with the lower draft, supported by wax or cement, or both. Then remove the lower draft and arrange the lower teeth so that the coaptation of the cutting edges of the teeth shall be perfect as desired. The patient may now be called in again, and any change in the arrangement made to gratify his or her taste or whim. Now place the plates with the teeth thereon, on their respective casts, oil the cast below the plate and apply plaster of paris over the edge and face of the teeth and down on the cast, say an inch below the edge of the plate. This will hold them firmly in their place while you remove the wax and cement from the inside, and fit and rivet backs to the teeth. When backed, cut the plaster through in two or more places, and remove. Clean the plate by heating. Cut the plaster so that while it will enable you to give each tooth its proper position, you can readily remove it from the teeth when they are cemented to the plate. Adjust the sections of plaster and the teeth in their proper positions. The plaster may be held by a piece of soft wire. Cement the teeth to the plate and strengthen the cement by laying slips of wood half an inch long along the joint and against the teeth. (I generally use the matches which are so plenty about the laboratory.) Remove the sections of plaster, being careful not to displace any of the

teeth. If it be intended to cover the strap with enamel, you should solder a wire after backing, and previous to replacing the teeth, along the plate parallel with the bottom of the straps, and about  $\frac{1}{8}$  or  $\frac{1}{4}$  of an inch from them.

The teeth are now backed and cemented to the plate and present an open space between the plate and the teeth, which is to be filled up with the base, using it quite wet to fill up the small interstices, filling in the rest as *hard and dry as possible*. Fill the cavity *between* the plates in the same manner, and oil the edge. Oil the surface of the base, envelope in the investient. (precisely as you would put an ordinary job into plaster and sand for soldering) and set on a fire-clay slab previously saturated with water. When hard, chip away the cement, cooling it if necessary with ice, until it is perfectly clean. Along the joints place scraps and filings of platina very freely, and cover all the surface you wish to enamel with coarse filings, holding them to their place by borax ground fine with water. Apply pure gold as a solder quite freely, say two dwt. or more to a single set. Put in a muffle and bring up a gradual heat until the gold flows *freely* which heat is all that will be needed for the base; withdraw and cool in a muffle. Remove the investient and fill up all crevices and interstices not already filled, with covering No. 2; cover the straps and base with the same, about as thick as a dime, and cover this with gum No. 2 about half that thickness. At the same time enamel the base in the chamber, and cover with thick soft paper. Set the plate down on the investient on a slab, with the edges of the teeth up. Fuse in a muffle and the work is completed. Blemishes may occur in the gum from a want of skill in the manipulation; should such occur, remedy by applying gum No. 1.

Should the patient object to the use of platina as a base, the work can be made as above on an alloy of gold and platina 22 carats fine, and soldered with pure gold, etc. as above. In all cases however, where it is used, the upper plate should be made as I have described above, but with platina any kind of plate can be used.

TO BE CONTINUED.

## G. W. KENDALL AND DENTAL PATENTS, ONCE MORE.

The readers of the Recorder will perceive, that our strictures on Kendall's "Historical sketch of American Dental Patents," produced a response from that gentleman, and which, (bating some of the most

offensive passages), was published in the August No. of the Recorder. They were addressed to our associate, Dr. C. C. Allen, and published without note or comment from either editor. We confess that we do not like the *spirit* of Kendall's article, and cannot afford to discuss the question of the propriety or impropriety of Dental Patents with such a writer. For we have a decided distaste for mere *slang* or *vulgar personalities* in any case. We thought it due to us from an entire stranger, that in giving a "historical sketch of dental patents," the writer should content himself with a *fair* and *impartial* statement of the facts in the case, without venting his spleen in a manner quite *personal* and *offensive*.

We thought (and think still) that the writer stepped out of his way, to chastise one or two individuals, and to display his lofty and chivalric disposition—his self-sacrificing devotion to the profession, to the disparagement of others every way worthy and meritorious with himself. And that too, when it was obvious to the careful reader of his article, that a faithful history of dental patents required no such running commentary. And when, by a desperate effort of his pen, he sought to sever the band of fellowship that binds us to a profession, for the success and advancement of which we have labored for the last eighteen years, we felt that he deserved a rebuke, which we administered accordingly.

In his letter to Dr. Allen, he charges us with "throwing dust in the eyes of our readers, by being *very* witty at his expense." As to being "*very* witty," we have no pretensions—and as to throwing dust in the eyes of our readers, we have too much respect for them to do it if we could. He complains that we did not comment on a single point, nor correct a single error in his whole article. Let us see what those "points" are. The first is that "Dr. Hill had acted in a manner unbecoming a professional gentleman, in receiving from various persons improvements infinitely more valuable than his, without recompense, and then turning round and charging them an exorbitant price for so trifling an improvement as 'Hill's Stopping'." Now the "*conduct unbecoming a professional gentleman*," is undoubtedly intended to apply to us, simply as a *patentee*, for if the "improvement" is "trifling," and the charge for it "exorbitant," few would care to use it at all, and *no one* would suffer. But the main question, as to the *propriety* of the patent—or whether it be a *breach* of good fellowship to take letters patent for any improvement in dentistry, that remains open for discussion, and is

precisely the point to be proved. This question, however, we cannot discuss with *such* a man as Kendall. He has shown an incompetency to treat the matter fairly, and a *personal* belligerent spirit, unworthy of the important subject which he has taken in hand.

The grave charge that we have "forfeited our professional standing," is of course involved in the decision of other questions, which must for a while at least, remain open.

As to the "exorbitant price," and the 6000 per cent. profit, this is simply false. The article, like all others, when first introduced, cost far more than it ever can again, and it would seem almost incredible if we should state to the readers of the Recorder, the *expense* and *labor*, that so simple a thing has cost us. But this is *our* business.

The next "point" is, that "it did not accomplish the effects described." Has he ever given it a trial? He says he has never *used* nor received any personal benefit from any patented dental instrument, mode of practice, or material, his own (our own) not excepted." What an umpire! What an *impartial* and *candid* witness?

As to its value and usefulness we happen to have the testimony of some of the most distinguished members of the profession, both in this country and in Europe, who *have used it* and *still use it*, and whose opinions are doubtless entitled to as much weight in this matter as that of our redoubtable historian.

The next "point" is, that "the patent is wholly null and void—and that any one might make the article sold as 'Hill's Stopping,' and sell without infringement."

As to the validity of the patent, that *remains to be tested*. If the writer will furnish us the proof, that he has either made to use, or to sell, the article known as "Hill's Stopping," we will give him a chance to test the validity, the laws in such cases made and provided. But the most offensive thing here, is the *indirect* encouragement which he gives to *piracy*. This spirit runs through his whole article on Dental patents, and of course it must be consistent with *high professional integrity* and the very *soul of honor*. What is this but encouraging a species of contemptible robbery? What a delightful code of moral and professional ethics! It is this spirit which Kendall evinces, that has plundered thousands of unfortunate patentees of the fruit of years of labor and toil. It is the spirit of *dishonest trickery* and *slippery evasion*, by which so many patents are rendered nugatory and valueless, and this, forsooth, is *all-right*. "We want words to express our contempt" of such a disposition.

Next comes our "carelessness," or "forgetfulness of common decency and gentlemanly behavior, in misquoting," &c.

Well, let us make the *amende honorable*. We find on examination, that we did make a mistake, and wrote principles for "*principle*." This however was *purely* an *oversight*, and *unintentional*. And it was not the reason of our quoting the passage. And it does not relieve the sentence. "But," says Kendall, "by a mistake of the printer, *neither* in that sentence was printed instead of *either*." Perhaps so—we cannot deny it, not having a copy of the original manuscript. We will therefore allow the poor printer to act as scape-goat, in this instance. But it was not so much for the purpose of showing the *grammatical* blunders, as the absolute irrelevancy of the whole paragraph, that we quoted it.

In the preceding paragraph he says, "I shall show," &c., and we simply quoted this to show that it had no connexion with what preceded it. Nor could we determine what it did mean. We are by no means tenacious about slight grammatical errors, for such things are common. Nor would we be captious in matters where we are somewhat vulnerable ourselves. But were actually in the dark as to his meaning, as we are in *several other instances*.

For instance. What is the meaning of the following, which we quote from his article on Dental Patents in the American Journal, verbatim et literatim et punctuatim. Page 399. "And here the inordinate selfishness of the quack stands out in bold relief; no high ambition glows in his breast, warming the ideal of his future into a hope of mental and moral greatness; on the altar of mammon, of all claim to professional regard."

And the following :—

"The profession of medicine, and even our own, young as it is, shows the history of quackery in the lives of men notorious, and frequently from this charlatanism, who have passed from their field of action, 'unwept, unhonored, and unsung,' leaving a memorial behind, an abhorrent recollection."

These sentences we confess are above our comprehension, and we very respectfully ask our historian to *come down*.

If the writer had given a faithful history of Dental Patents, reserving his offensive comments, he would have deserved, as he doubtless would have received, the thanks of the profession. But this was doubtless incidental to his main design. He evidently had another object in view, he had scented his game, and the "historical sketch," was to be the

covert from which he should blaze away at his victims. Dr. J. Allen, and A. Hill, must "stand the fire," in behalf of the whole. Can it be possible that all this "fuss" originated in a disappointment, in not securing letters patent for a *certain* invention? Wonder if there has been a correspondence with certain patent agents at Washington? How some people do *scorn* the idea of a "*patent*."

But the manner in which Kendall comes down after his flight is amusing. Hear him. "My article has extended to a greater length than I had intended, and for his future effusions, unless they shall contain a better argument than either he or Dr. Taylor ever wrote, I shall consider them beneath even a passing notice."

O, what will Dr. Taylor say to that. "*Great strait I, and little crooked You.*" "Woe's me"—Woe's Dr. Taylor.—NORWALK ED.

### AMERICAN DENTISTS ABROAD.

The success and distinction which have been gained by American dental practitioners in different parts of the world, and especially in Europe, have been the subject of an occasional paragraph in American Journals, and is undoubtedly a matter of just pride to the friends of such individuals, as well as to the profession generally on this side of the Atlantic.

Where an honorable distinction is fairly earned, and justly maintained among distinguished practitioners of dentistry and men of eminent standing in other respects in the old world, we can but feel a degree of pleasure in recording the fact to the credit of the profession in the United States of America. And while we would not undervalue the professional standing and world-wide reputation of many across the water, whose names are as familiar to us as household words, we confess that our national vanity is a little gratified when we hear of the success and good fortune of our brethren abroad. We give the following extract from a letter recently received from a non-professional friend in Paris, and by-the-way, a "*real live Yankee*," who may be supposed to express public sentiment with respect to the subject matter of his communication. And our friend Evans must excuse the liberty taken with his name, as our correspondent is a Yankee editor, and used to *just such "tricks."*—Norwalk Ed.

The following is the extract referred to:—

"PARIS, July 16th, 1852.

"DEAR DOCTOR.—Yesterday I called at the far-famed European dental establishment of Brewster & Evans, as it formerly was, though I

learned that Dr. Brewster has not been connected with the concern since his return from America; last summer. He, has made enough of this world's goods and retired, leaving his business in the hands of his former active partner, who, with an elder brother, who has recently joined him from Philadelphia, are fully sustaining the business character of the establishment.

"Among the many costly volumes of prints, which lay upon his table, I recognized the familiar old russet cover of the Dental Recorder, C. C. Allen and A. Hill editors, which, of course, strongly reminded me of home and home scenes, and to which occurrence you are principally indebted for this hasty epistle. Dr. J. W. Evans is a young man, yet with all the apparent accomplishments of age. His work is of the most perfect and beautiful character, and from the character of his patrons, where *money* is no consideration, of course he can afford to *elaborate* better than American dentists. He has much more patronage than he can possibly accommodate, although everything is done in the most systematic order, and everything that *can be* is executed by other experienced hands. His rooms are of course most gorgeously fitted up, and embellished with our own coat of arms—the portraits of our principle statesmen, and the various crowned heads of Europe, who confer on him their exclusive patronage. To give you an idea of his *business*, it requires the services of two *ushers* to receive, and wait upon company out. His orders for services are regularly booked, and run three or four months ahead. One gentleman called while I was there who had come all the way from Athens to have a set of teeth inserted, and when Dr. Evans informed him that he could not possible do it under *two months*, he willingly consented to wait, although at an enormous expense rather than employ any one else. So much for a *name*! But you must not think Dr. E's. reputation has been acquired without genuine *merit* or untiring effort, for such is not the case. He is emphatically *deservedly popular*, and I dare say the same urbanity and indefatigable effort to excel would ensure success in any profession. He is dentist to the "Prince President," the King of Bavaria, and in fact to most of the crowned heads and Princes Royal of the entire continent. He is every inch a gentleman, and a true specimen of what American talent and enterprize can accomplish, and long may he live to reap the rewards of his well earned reputation."—A. H. B.

















